

POSTCOLONIAL CLI-FI: ADVOCACY AND THE NOVEL FORM IN THE
ANTHROPOCENE

by

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DISSERTATION ABSTRACT

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Through the filters of postcolonial theory, environmental humanities, and digital humanities, this project considers the capabilities and limitations of novels to galvanize action in response to environmental crises. My findings suggest that novels are well equipped to engage in environmental education, although some of the form's conventions must be disrupted to fully capitalize upon its strengths. The modern novel is conventionally limited in scope, often resorts to apocalyptic narratives that can breed hopelessness, is dedicated to a form of realism that belies the dramatic weather events exacerbated by climate change, defers authority to a single voice, and is logocentric. By supplementing conventional novels with a variety of paratexts, including digital tools, scientific findings, non-fiction accounts of past, present, and future activism, and authorial biography, it is my contention that the novel's potency as a pedagogical tool increases.

After addressing this project's stakes and contexts in my Introduction, Chapter II assesses three South Asian novels in English that are concerned with sustainable development: Bhabani Bhattacharya's *Shadow from Ladakh*, Bharati Mukherjee's *Jasmine*, and Aravind Adiga's *The White Tiger*. I conclude by considering how StoryMaps might further disrupt pro-sustainable development propaganda alongside

more traditional novels. Chapter III examines how explicitly activist South Asian novelists construct authorial personae that propose additional solutions to the environmental problems identified in their novels, focusing on Amitav Ghosh's *The Hungry Tide* and Indra Sinha's *Animal's People*. Chapter IV coins the term "locus-colonial novel," a novel that decenters the human, situating place at the fulcrum of a work of historical fiction, using Hari Kunzru's *Gods without Men* as one exemplar. I examine Kunzru's novel alongside promotional materials for planned Mars missions to consider how narratives of colonialism on Earth might lead to a more socially and environmentally sustainable colonial model for Mars. Chapter V introduces the concept of a digital locus-colonial novel that allows users to develop informed, environmentally focused scenarios for colonial Mars. Through these chapters, this dissertation identifies specific rhetorical techniques that allow conscientious novels to create imaginative spaces where readers might explore solutions to the social, economic, and increasingly environmental problems facing human populations worldwide.

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TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
II. THE CREST OF DEVELOPMENT’S “TERRIFIC WAVE”: PRO-DEVELOPMENTAL RHETORIC AND THE MEANS OF RESISTANCE	34
III. THE ACTIVIST AUTHOR: PARATEXTS AND THE NOVEL IN THE ANTHROPOCENE	80
IV. SPECULATIVE DIASPORAS: HARI KUNZRU’S HISTORICAL CONSCIOUSNESS, THE RHETORIC OF INTERPLANETARY COLONIZATION, AND THE LOCUS-COLONIAL NOVEL	129
V. FINAL THOUGHTS: <i>COLONIZE MARS</i> AND THE LOCUS-COLONIAL NOVEL IN THE DIGITAL AGE	165
REFERENCES CITED	187

LIST OF FIGURES

Figure	Page
1. A visualization of extra-textual environmental repercussions of the steel industry paired with textual events from <i>Shadow from Ladakh</i>	77
2. A screenshot of an annotated immersive satellite tour of <i>Shadow from Ladakh</i>	78
3. An image of a t-shirt available for sale at the Mars One webshop	149
4. A screenshot showing one section of <i>Colonize Mars</i>	179
5. Many of the narratives showcased on <i>Colonize Mars</i> are supplemented by other, linked media.....	180

LIST OF TABLES

Table	Page
1. Analysis dimensions and criteria for evaluating the efficacy of digital climate change games.	171

CHAPTER I

INTRODUCTION

This project seeks to answer two deceptively simple questions at issue: Can novels encourage readers to respond meaningfully to climate change and other environmental crises? And, if so, how? There is little doubt that environmental welfare is an urgent and pressing issue, and that a failure to adequately respond to environmental threats has dire consequences for life on Earth. Already, humanity contends with increasingly extreme weather events and natural disasters that are exacerbated by environmental issues. Climate change is simultaneously a problem of scarcity and super-saturation: Cape Town spent much of 2018 grappling with the looming threat of “Day Zero,” the day it will run out of drinking water, endowed with the dubious honor of becoming the first of the world’s major cities to do so; warming global temperatures are almost certainly responsible for the record-breaking hurricane season of 2017, which included Hurricane Maria that leaves much of Puerto Rico without power to this day (McKenzie and Swails; Sneed). In both places, the damage caused by climate-change related drought and flooding is compounded by other environmental issues, such as the contamination of water by industrial and agricultural chemicals. Experts are beginning to publicly recognize that ongoing geopolitical conflicts are often intensified by atypical environmental conditions, including armed conflicts and displaced refugees.¹ Despite the

¹ Former Secretary of State John Kerry has notably linked the conflict in Syria to drought fueled by climate change. At the 2015 Universal Expo in Milan, Italy, Kerry noted:

It is not a coincidence that immediately prior to the civil war in Syria, the country experienced the worst drought on record. As many as 1.5 million people migrated from Syria’s farms into Syria’s cities, and that intensified the political unrest that was beginning to brew. Now, I’m not telling you that the crisis in Syria was caused by climate change. No. Obviously, it wasn’t. It was caused by a brutal dictator who barrel bombed, starved, tortured, and gassed his own people. But the devastating drought clearly made a bad situation a lot worse.

As Kerry notes in his insightful analysis of the situation in Syria, Syrian cities were overwhelmed by

wealth of evidence that climate change and environmental degradation are critical issues that demand immediate attention and action, however, humanity's response has been slow and inadequate. To better understand the complex problems of climate change and environmental degradation, the rhetoric surrounding them, insufficient action on a global scale, and the questions this project seeks to answer, it seems worthwhile to tell a tale of two recent Presidents of the United States.

In 2017, former president Barack Obama identified climate change as the global problem that will “define the contours of this century more dramatically” than all the others (Obama). Obama's willingness to discuss climate change, and his desire to cast the United States, the world's second largest emitter of carbon dioxide emissions, as a global leader in the effort to reduce global greenhouse gas emissions, was a meaningful and important step in global politics (Boden et al.). Obama's rhetoric surrounding climate change and environmental degradation was a driver of material real-world action, and under his leadership, the U.S. signed onto the Paris climate deal: the first significant global agreement for a low-carbon future.²

climate-related refugees. The United Nations views climate change as a major driver of diaspora, estimating that climate-related refugees will reach record highs, and keep increasing, as long as climate change is allowed to continue unchecked (United Nations High Commissioner for Refugees).

² The Paris climate accord is a global action pact signed by 195 heads of state, which is designed to encourage nearly every country in the world to collaboratively battle rising temperatures. Although the accord has been criticized as inadequate to keep global temperature rise below two degrees Celsius, the pact's stated goal, it has nevertheless been widely heralded as a hopeful and necessary step in the right direction (International Energy Agency). Similarly, climate legislation under Obama's administration has also been criticized for its inadequacy. Despite an ambitious agenda to take action on carbon emissions, even administration insiders, like senior adviser John Podesta, publicly stated that history would likely deem then President Obama's climate-change efforts insufficient, opining: “But fifty years from now, is that going to seem like enough? ... I think the answer to that is going to be no” (Hertsgaard). Obama himself admitted as much in his final public address as president: “without bolder action, our children won't have time to debate the existence of climate change. They'll be busy dealing with its effects. More environmental disasters, more economic disruptions. Waves of climate refugees seeking sanctuary” (Holden). Despite being perhaps the greenest American president in the history of the office, Obama recognized that his efforts would only accomplish so much.

Obama's impassioned words about climate change in 2017 came with a heavy dose of solastalgia, for he was no longer in office at the time he penned them.³ Instead, the United States was in the hands of President Donald Trump, whose views on the environment are remarkably different from those of his predecessor. Instead, Trump undertook an aggressive legislative agenda that ignored the concerns of environmentalists, undoing decades of environmental protections.⁴ Trump's disregard for environmental welfare is unsurprising given that he has repeatedly and publicly questioned both whether climate change is happening at all and, with more vigor,

³ The term solastalgia was coined by Glenn Albrecht in 2007 to refer to "the pain or distress caused by the loss of, or inability to derive, solace connected to the negatively perceived state of one's home environment. Solastalgia exists when there is the lived experience of the physical desolation of home," or "chronic environmental stressors" (Albrecht et al. S96).

⁴ By the time *The Guardian* published Obama's call to action on May 26, 2017, Trump's administration had begun to wage war on policies designed to protect the environment and prepare the nation to respond to the predicted outcomes of climate change, many of which predated Obama's tenure. On March 28, 2017, Trump signed an Executive Order "Promoting Energy Independence and Economic Growth," which sought to moderate scientific warnings about the impacts of climate change and carbon emissions, laying a foundation to support and justify his ongoing assault on environmental protections (Trump). Trump massively restructured the Environmental Protection Agency and proposed to slash the agency's budget by a devastating 31.4 percent (Greshko et al.). Trump's 2018 budget proposed sweeping cuts to many U.S. programs designed to study and mitigate the effects of climate change or research renewable energy: in addition to the cuts at the EPA, the budget requested a 10.9 percent funding cut for the Interior Department and a 5.6 percent cut to the Energy Department (Office of Management and Budget 42). Although Trump's 2018 budget proposal was struck down by Congress, Trump's proposed 2019 budget advocates similar cuts, calling for a 23 percent reduction in the EPA's budget (Dennis). Under the aegis of the Trump administration, the Department of the Interior loosened regulations on the deaths of vulnerable species because of human development, in violation of the Migratory Bird Treaty Act (Dlouhy). The Trump administration appointed and confirmed Ryan Zinke as Secretary of the Interior, who so alienated the National Park System Advisory Board that the majority of them resigned in protest (Greshko et al.). In April, 2017, President Trump signed an executive order to review bans on offshore oil and gas drilling in parts of the Arctic, Pacific, and Atlantic oceans, ostensibly with the aim to expand offshore drilling (Eilperin). Trump's quantifiable threats to the environment were accompanied by a systematic, if less calculable, assault on the language of climate change and the environmental movement within government communications, both public-facing and internal. After his ascension to the office, a variety of government agencies, including the EPA, the Interior Department, and the Bureau of Land Management, eliminated or obfuscated mentions of climate change from their websites. On December 18, 2017, Trump announced that the United States will no longer regard climate change by name as a national security threat (Greshko et al.). When Obama published his missive on the ultimate import of environmental welfare, rumors were already circulating that Trump planned to withdraw the United States from the Paris climate agreement, which was confirmed on June 1, 2017 (Shear). In the spirit of brevity, this account is by no means exhaustive, and only includes the events that had already taken place by the time of Obama's publication.

whether climate change can be attributed to human action. In 2015, Trump told conservative talk show host Hugh Hewitt:

I'm not a believer in global warming. And I'm not a believer in man-made global warming. It could be warming, and it's going to start to cool at some point. And you know, in the early, in the 1920s, people talked about global cooling. I don't know if you know that or not. They thought the Earth was cooling. Now, it's global warming. And actually, we've had times where the weather wasn't working out, so they changed it to extreme weather, and they have all different names, you know, so that it fits the bill. But the problem we have, and if you look at our energy costs, and all of the things that we're doing to solve a problem that I don't think in any major fashion exists. I mean, Obama thinks it's the number one problem of the world today. And I think it's very low on the list. So I am not a believer, and I will, unless somebody can prove something to me, I believe there's weather. I believe there's change, and I believe it goes up and it goes down, and it goes up again. And it changes depending on years and centuries, but I am not a believer, and we have much bigger problems.

In this statement, Trump articulates a triad of concerns that are oft mentioned by those who dismiss the threat of climate change suspicion: that “proof” of humanity’s role in climate change has yet to be found, that there are bigger problems that must take priority over climate change, and that the language surrounding climate change is inaccurate and therefore the whole premise is suspect.

Trump’s primary argument, that there is insufficient evidence that climate change is driven by human action, defies scientific consensus. As NASA states on its website,

myriad studies published in peer-reviewed scientific journals show consensus among at least 97 percent of actively publishing climate scientists that “Climate-warming trends over the past century are extremely likely due to human activities” (“Scientific Consensus”). Moreover, the scientific community has been outspoken about this causation, and the vast majority of leading scientific organizations worldwide have released statements supporting the position. Nor is this research particularly recent or groundbreaking: the relationship between the burning of fossil fuels and the climate has been studied for over a century, the first study of which took place in 1896. Research in the 1950s suggested that increasing atmospheric carbon dioxide levels should warm Earth (Trexler 2). In 1988, at the World Conference on the Changing Atmosphere: Implications for Global Security, a group of prestigious scientific experts implored global governments to enact strict, specific targets for reducing greenhouse gas emissions (Weart 149). As technology has allowed for more sophisticated modeling and a larger body of research has developed, scientific conviction that both the climate is warming and that it is doing so as a result of human activity has only grown.

A wealth of credible scientific studies makes it easy to disprove Trump’s argument that alarms about climate change are insufficiently substantiated by evidence, but an abundance of research also suggests that a lack of evidence is not the problem. Kari Norgaard notes that while people need information about climate science in order to become invested in climatological issues, information alone is inadequate to prompt the public to take meaningful action in the face of anthropogenically motivated climate change (72-3). Divorced from narrative, information can be manipulated to serve a person’s self-interest, and can even reinforce pre-existing beliefs (Norgaard 73). To put it

bluntly, the default climate science communication method of supplying credible climate science to the public has failed to galvanize widespread action in response to climate change.

Perhaps because information alone is insufficient to convince people that climate change is an urgent and pressing issue, Trump is by no means unique in his refusal to believe in climate change and its anthropogenic engine. A 2017 study conducted by Yale University researchers found that only seven in ten Americans think global warming is happening (Leiserowitz et al.). That number is hard-won, and is the highest since Yale began its research in 2008. It may seem surprising, then, that in 1989, 79% of Americans polled had heard or read about the “greenhouse effect,” and most of those citizens believed they would live to experience the effects of climate change (Weart 151). The drop in public understanding about climate change is part of an alarming trend known as the psychological climate paradox: in many developed countries, even where the majority of citizens report some or high concern, the importance of climate change as an issue is ranked relatively low (Stoknes 1). The paradox has been blamed on several factors, including deliberate counter-campaigns led by conservative ideologues and industry insiders.⁵ In the U.S., for example, by the mid-1970s, political actors and fossil-fuel industries collaborated to develop and disseminate arguments against global warming. As Spencer Weart writes in *The Discovery of Global Warming*, “Backed up by some scientists, industry groups developed arguments ranging from elaborate studies to punchy advertisements, all aimed at persuading the public that there was nothing to worry about”

⁵ Per Espen Stoknes succinctly lists possible causes of the climate paradox as “climate change perceived as distant in both time and space, the lack of a global treaty and political action, the quest for economic growth, the financial crisis, the complexity of the problem leading to numbing and helplessness, cultural filters, cognitive dissonance, limited individual responsibility, an active counter-campaign and denial as a fear-avoidance strategy” (1).

(110). Importantly, conservatives and skeptics deliberately sought to politicize climate change, in part because they believed “a complex and lengthy study process would restrain any move to take concrete steps to limit emissions” (Weart 152). The Intergovernmental Panel on Climate Change (IPCC), created by the World Meteorological Organization and other United Nations environmental agencies in 1988, was initially developed under pressure to ensure that climate change was no longer an issue purely within the domain of independent scientists, but of representatives of the world’s governments (Weart 152).

Trump may help perpetuate the paradox not only through his own insistence that there are more urgent problems to contend with than climate change, but also through the assembly of his cabinet, which is staffed with industry allies who have a vested economic interest in convincing the public that climate change is not a pressing concern. Former Secretary of State Rex Tillerson, who was formerly still chairman and CEO of ExxonMobil, has refused to blame the increase of greenhouse gasses in the atmosphere on human activities (Meyer). Mike Pompeo, who is Tillerson’s recently confirmed successor, is virtually vitriolic in his responses to questions about climate change, telling Congress that suggesting that climate change is a major national security threat is “ignorant, dangerous and absolutely unbelievable” (Friedman and Davenport). Energy Secretary Rick Perry has insisted that carbon dioxide emissions are not the main driver of climate change (Lavelle). EPA Administrator Scott Pruitt has expressed doubt that “human activity on the climate” is “a primary contributor to the global warming that we see,” and called for more debate, review, and analysis (Chiacu and Volcovici). Interior Secretary Zinke reportedly ordered staffers not to mention the threats climate change

poses to National Parks (Martelle). The current administration, nearly across the board, actively works to dismiss the concerns of environmental advocates as radical, alarmist, and misguided.

In contrast, Obama suggests that climate change is the most urgent global issue precisely because it exacerbates other issues. Obama notes that climate change makes it more difficult to produce food, contributing to scarcity and raising prices, and thereby driving both producers and consumers into poverty. He adds that climate change intensifies natural disasters that are emotionally and economically devastating, and can motivate migration as climate refugees are forced to evacuate particularly devastated regions (Obama). As other experts have noted, climate refugees and scarcity can also fan the flames of sociopolitical tensions, escalating, in particularly severe cases, armed conflicts.⁶ Obama concludes that climate change is a great and unfortunate unifier that disrupts all nations, however unequally: “No nation, whether it’s large or small, rich or poor, will be immune from the impacts of climate change.” The ubiquity of the effects of climate change uniquely positions it to inflame nearly every other problem, be it global or local. Therefore Trump’s argument, that climate change is not worth consideration on a global stage replete with more pressing issues, also seems to be without merit.

⁶ In addition to John Kerry’s aforementioned comments about Syria at the 2015 Universal Expo in Milan, Al Gore has also noted the link between drought and the Syrian civil war. In a 2016 Ted Talk, Gore said: The climate-related historic drought that started in Syria in 2006 destroyed 60 percent of the farms in Syria, killed 80 percent of the livestock, and drove 1.5 million climate refugees into the cities of Syria, where they collided with another 1.5 million refugees from the Iraq War. And along with other factors, that opened the gates of Hell that people are trying to close now. The US Defense Department has long warned of consequences from the climate crisis, including refugees, food and water shortages and pandemic disease.

Although the war in Syria is certainly not the only military conflict to be intensified by the effects of climate change, it is one of the more conspicuous examples of how climate change, in concert with eroding political stability, can have breathtaking consequences.

Trump’s final point, that climate change is suspect in part because of the language surrounding it, is a widespread talking point of climate change skeptics that reveals a more insidious flaw in the dominant rhetoric surrounding climate change. Trump has returned to this line of thinking many times in his public appearances and writings; his Twitter feed is rife with interrogations of the term “global warming.” In a 2014 tweet, Trump wrote: “For those that constantly say that ‘global warming’ is now ‘climate change’ — they changed the name. The name global warming wasn’t working” (@realDonaldTrump). Of course, global warming and climate change are both used frequently in scientific literature because they refer to distinct, though related, physical phenomena: global warming, the long-term upward trend of the global temperature average, is the main driver of climate change, which encompasses the varied changes to the global climate as a result of increasing average global temperature. Embedded within Trump’s misunderstanding of scientific terminology is a salient point: the way we talk about climate change is not working. While some ambiguous “they” has certainly not intentionally changed the name of environmental phenomena for nefarious purposes, the fact that a vocal minority of the U.S. population finds such an argument plausible and compelling showcases domestic illiteracy in regards to environmental science, and that is a massive problem for environmental advocates.

Although more research is needed to discern which methods of communication might most effectively galvanize the populace to respond to the causes and threats of climate change, a growing body of work suggests that narratives are important tools. In his research on resolving the climate paradox, psychologist Per Espen Stoknes advocates for positive environmental stories “that describe and help us imagine a renewal of

wildlife and ecosystems” (168). Stoknes identifies five main barriers to climate communication, and asserts that to break through two of them, which he characterizes as denial and the ways in which climate messages are filtered through cultural identity, we need “captivating storytellers who give hope and inspiration, as well as attractive images of a future in which we live with more jobs, higher well-being *and* lower emissions. If it cannot be imagined, then people will surely not work for it to happen” (168).⁷ Novelist and literary theorist Amitav Ghosh has suggested that cultural expressions like novels are a primary engine of desire, noting:

When we see a green lawn that has been watered with desalinated water, in Abu Dhabi or Southern California or some other environment where people had once been content to spend their water thriftily in nurturing a single vine or shrub, we are looking at an expression of a yearning that may have been midwived by the novels of Jane Austen. (*Derangement* 9-10)

Ghosh contends that if culture can make us crave impractical landscaping that flouts our environmental circumstances, that it may also compel us toward more sustainable desires. For both Ghosh and Stoknes, literature is worth considering as a viable means to attract and sustain public interest in environmental issues in a way that previous informational campaigns have not. Perhaps Trump’s resistance to climate science is as much about his tongue-in-cheek moniker, as “The President Who Doesn’t Read,” as much as it is about his business affiliations (Graham). What is clear is that in an age in which critical policy

⁷ Stoknes’ full list of barriers to effective climate communication is as follows:

(1) climate change is perceived as distant, (2) it is often framed as doom, cost and sacrifice, (3) few opportunities for action weaken attitudes through dissonance, (4) fear and guilt strengthens denial, and (5) climate messages are filtered through cultural identity. (162)

Stoknes builds heavily on Norgaard’s earlier work for his consideration of both dissonance and denial.

decisions are in the hands of climate skeptics, it is more imperative than ever to plumb every depth for methods of communication that may help shift the paradigm on climate change from a low-priority partisan issue to a high-priority, universal one.

In this project, I'll be considering the ways in which the novel has and must adapt to adequately respond to issues of climate change through the lens of postcolonial ecocriticism. Developing concurrently, the fields of postcolonial theory and ecocriticism may nevertheless seem like strange bedfellows. Over the past fifteen years, postcolonial ecocritics have gone to great effort to analyze and overcome several critical loggerheads that have long divided the disciplines. Writing in 2001, Susie O'Brien emphasizes that postcolonial theory is explicitly humanist, while ecocriticism seeks to make visible the interdependence of living organisms without privileging the role of the human (143-4). Rob Nixon addresses a similar disjuncture writing in 2011, noting that postcolonial theory fixates upon hybrid human cultures while much ecocriticism vilifies those cultures as little more than a source of contamination for a previously pristine world (*Slow Violence* 236). Addressing the tension between humanist and environmental concerns, Elizabeth DeLoughrey and George B. Handley write that postcolonial ecocriticism "must be more than a simple extension of postcolonial methodologies into the realm of the human material world; it must reckon with the ways in which ecology does not always work within the frames of human time and political interest" (4). The growing field of postcolonial ecocriticism is not simply an amalgam of two discrete and seemingly incompatible methodologies, but something new unto itself. Postcolonial ecocriticism must work to place humanist concerns on an ecosystemic scale; postcolonial ecocritics

must strive to find a way to consider humans threefold: as a species, as global and local political actors, and as individuals with certain inalienable rights.

To begin to assess which types of literature seem best equipped to catalyze real-world reactions to social and environmental problems, this project turns to the postcolonial South Asian novel in English, and that move can help explain my choice of theoretical frame. There has been, in recent years, a drive to dismiss postcolonial theory as a framework that has outlived its usefulness. This drive does not indicate that the main concerns of postcolonial theory and its offshoots have been fully resolved, but to say first that they still make Western thinkers uncomfortable, and second that the modern concerns of postcolonial thinkers must move beyond the formal colonizer-colonized relation. Instead, postcolonial theorists contend with the legacies of historical colonization, and more urgently perhaps, countless people who still find themselves disenfranchised and displaced in a postindustrial capitalist society. As Robert Young writes in "Postcolonial Remains," what we have instead of conventional colonies beholden to a ruling imperial outpost:

... is something almost more brutal, because there is no longer even a relation, just those countless individuals in so many societies, who are surplus to economic requirements, redundant, remaindered, condemned to the surplusage of lives full of holes, waiting for a future that may never come, forced into the desperate decision to migrate illegally across whole continents in order to survive. The postcolonial question now is how to make the dream of emancipation accessible for all those people who fall outside the needs of contemporary modernity. (27)

In the reality of globalized migration and the widespread oppression of people, worldwide, who cannot or will not conform to the rigid demands of modernity, postcolonial theory can offer a historical framework that helps demystify governing power structures that are even more occluded than they once were.

Settler colonial theory, which contends with the type of “internal colonialism” in which indigenous populations are displaced by invasive settlers who establish sovereignty, grapples with many of the same issues addressed within this project, but with critical contextual differences. As Young writes, “oppressive forms of ‘fourth-world’ internal colonialism continue to operate on every continent of the earth, particularly with respect to exploitation of natural resources that shows scant regard to the lives and lands of indigenous peoples” (25). And while postcolonial theory has great potential for helping to explicate the systems that empower the exploitation of indigenous populations (and, for that matter, natural resources), it has yet to adequately do so. As Eve Tuck and K. Wayne Yang note in their groundbreaking “Decolonization is not a Metaphor,” settler colonialism cannot be attended to through the lens of conventional postcolonial theories because in indigenous contexts, the colonial project is more all-consuming as the “colonizer comes to stay” (5). The filter must be shifted to account for the totality of ongoing settler colonial occupations.

South Asia is certainly not without its own examples of indigenous populations being displaced, oppressed, and exploited by settler colonialism, and as this project expands, it will be important to consider means of resistance to settler colonial projects alongside the more mainstream anti-colonial actions in response to exogenous colonizers that are currently examined within this work. This project is primarily focused on

mainstream cultures within former colonial holdings, which Tuck and Yang define as external colonialism, which concerns both the historical and ongoing “expropriation of fragments of Indigenous worlds, animals, plants and human beings, extracting them in order to transport them to - and build the wealth, the privilege, or feed the appetites of - the colonizers, who get marked as the first world” (4). Because of this focus, postcolonial theory is a particularly fruitful lens through which to examine the issues involved, and it would be an inappropriate appropriation to use settler colonial theories to read the texts currently included in this project. I agree with Tuck and Yang that “decolonization will take a different shape in each of these contexts,” and mistaking any overlaps for sameness is both offensive and misguided (5). It is with that in mind that I have considered the texts considered within this book from the perspectives of thinkers focused on external colonization and its attendant issues.

The impetus to focus on the specific texts included in this dissertation is multifarious, and may best be explained by examining their increasingly specialized sub-genres: the novel, the post-colonial novel, and the South-Asian postcolonial novel in English. Print-media, and the novel more specifically, has long been credited with triggering seismic changes in public belief, self-perception, and behavior. While many theorists have analyzed how literature catalyzes such paradigm shifts, my research begins at the intersection of the work of Benedict Anderson, Meenakshi Mukherjee, and Donna Haraway. Anderson notes that print capitalism was one critical harbinger of the advent of the nation and nationalism, and that the novel is an analogue to the community of nation (36). As such, novels allow readers to imagine themselves as parts of a sociological organism as well as discrete individuals (Anderson 26). Mukherjee, too, regards the novel

as an influence on collective identity, noting that in the safe space of the English novel, English-educated Indians began to reconceive the culture of the colonizer, and the novel became a space in which discourses of colonial resistance and colonial obeisance waged war (M. Mukherjee 5-6, 16-7). Elaborating on the premise that the novel can serve as a test zone in which to psychologically confront otherwise overwhelming real-world issues, Haraway works to theorize the specific rhetorical moves that make some literature better equipped to engage the public imaginary than others. For Haraway, the ability of the novel to evoke productive imaginative space is best modeled in the pages of SF, which she defines as speculative fabulation, speculative feminism, science fiction, speculative fiction, science fact, and science fantasy. For Haraway, the SF novel has the ability to expand the realm of the possible, allowing readers to actively and consciously participate in imagining alternative ways of interacting with the lived environment (*SF* 12). SF's potency depends upon its marginalization: because SF is anti-canonical, the reader feels empowered to participate in its worlding project ("Monsters" 100). The marginalized roles of both the postcolonial and the environmental novel in the canon of English arts and letters can be viewed as similarly liberating: they allow readers to use such texts as an imaginative launching point because they do not feel sacred and therefore inviolate. This project will focus on the novel for reasons outlined by Anderson, Mukherjee, and Haraway: the novel is simultaneously a product of its times and a timeless artifact; the novel in English has a well-documented material history both globally and in South Asia particularly; and the wildly disparate manifestations of the novel — from disposable pulp to unimpeachable classic — inform its narrative reception and potential for stimulating reader imagination.

Postcolonial novels tend to respond to continuing environmental tyranny in ways that are informed by models of postcolonial resistance, making them particularly pertinent for this project. Postcolonial literature has long been used to situate complex and unpleasant themes in more palatable contexts. Chinua Achebe has suggested that literature is critical for helping readers gain a new perspective on reality and the ways that reality may or must change, because literature enables “us to encounter in the safe, manageable dimensions of make-believe the very same threats to integrity that may assail the psyche in real life” (170). Although Achebe focuses on the ways in which literature can help former colonial subjects imagine themselves as citizens of functional, egalitarian, independent nation-states, his point that literary narratives are able to “offer the kinetic energy necessary for social transition and change” has grander global relevance as climate change forces civilizations the world over to reconsider their ecosystemic relationships (167). Postcolonial environmental narratives are capable of integrating colonial histories that showcase the structures that underpin human and environmental exploitation, serve as cautionary tales of the dangers of transitioning from one societal model to another, and incorporating legitimate climate science, all while describing more egalitarian and sustainable possible futures. It is for these reasons that I consider carefully crafted postcolonial environmental novels to be one possible solution to the dilemma of how to motivate widespread response to both environmental concerns and the pervasive inequalities that linger in the wake of colonization.

Postcolonial novels have a long history of participating in social and environmental activism, and are therefore well equipped to handle the fresh challenges of climate change. In Natalie Hopkinson’s recent *A Mouth is always Muzzled: Six*

Dissidents, Five Continents, and the Art of Resistance, she considers the ability of postcolonial art and artists to contribute to resistance efforts specifically. Hopkinson notes that in the immediate aftermath of independence, resistance leaders often task artists with helping freshly independent citizens conceive of new identities. In Guyana, specifically, artists were to help the public envision a more just and equitable society, particularly because “Artists are the ones who can see a reality that is not currently staring them in face” (Hopkinson 37, 59). After studying and interviewing some of Guyana’s most revolutionary artists and writers, however, Hopkinson invokes Guyanese poet and political activist Martin Carter, concluding that all Guyanese activist-artists are inhibited by their fear of political reprisal: “no matter where we live or what we do, all of our mouths are muzzled in the quest for survival” (155).⁸ If Hopkinson is right, that artistic postcolonial resistance is always hampered by the desire for self-preservation, then theoretically environmental resistance should be motivated by the same force. Although powerful business interests may benefit from the perpetuation of misinformation about climate change, truly democratic republics should welcome public pressure to respond to climate change, as effective action to mitigate climate change should make the populace and the planet healthier and offer better outcomes for long-term survival. There can be little doubt that a failure to respond to climate change

⁸ The full text of Carter’s inspirational poem, which he published in the Sunday newspaper to indicate he was leaving a promising political administration he now believed, ostensibly, to be repressive, reads:

*And would shout it out differently
if it could be sounded plain;
But a mouth is always muzzled
by the food it eats to live.* (Hopkinson 105)

sufficiently will destabilize many countries around the world and endanger the majority of the world's population.⁹

Postcolonial novels that incorporate issues of both social and environmental injustices engage in a sort of eco-bricolage, a term I use to describe the ways in which such texts adapt established postcolonial rhetorical techniques designed to resist colonialist perspectives to respond to evolving oppressions that include neocolonialism and environmental degradation. Wendy Knepper defines postmodern bricolage as a process that reappropriates existing objects or ideas to give them new, often subversive potency (71). My consideration of eco-bricolage is informed by her analysis of the term for use in postcolonial contexts. Knepper describes bricolage as a critical device for the constitution of postcolonial identity because it reconstitutes memory through the “examination of traumatic moments in history, in order to engage in a transformative, dialogic process for recreating and ‘re-membering’ one’s place in the world” (85). Eco-bricolage builds upon those same traumatic histories to shape future action: traumatic legacies in postcolonial history are revived to inform responses to ongoing environmental oppressions, showcasing how such ideology has been fought in the past.

South Asian postcolonial novels are particularly rich areas in which to study eco-bricolage, specifically the complex interplay of social and environmental exploitation that has made those former colonial outposts particularly vulnerable to ecological calamity.

⁹ Whether the interests of the people or interests of industry carry more weight in a largely capitalist global economy is an issue worth debating elsewhere. As Naomi Klein argues, “what gets declared a crisis is an expression of power and priorities as much as hard facts. But we need not be spectators in all this: politicians aren’t the only ones with the power to declare a crisis. Mass movements of regular people can declare one too” (6). It is quite possible that governments will continue to defer action on environmental issues at the behest of big business, but I am inclined to believe that enough public pressure would ultimately shift current trends in this arena. Although the confines of this project do not allow for much investigation into this issue, it is certainly an area worth watching in the debate about the efficacy of environmentally oriented literature to catalyze meaningful action in response to climate change and environmental degradation.

The history of climate change is inextricably linked to that of empire and imperialism. Despite the fact that many former colonial holdings in Asia have only recently been able to enter the carbon economy, Asia stands to lose a great deal if the worst predictions of climate change come to fruition. This is not because of a lack of resources: the foundation of the megacorporation Royal Dutch Shell, known until the 1960s as Burmah-Shell, was the thriving oil fields of Yenangyaung, which were under Burmese control until 1885 when the British invaded and annexed them (*Derangement* 101-2). As Ghosh notes, imperial powers deliberately restricted the rise of fossil-fuel economies in their territorial holdings, because if India and other Asian colonial holdings had synchronously developed carbon economies, the raw materials necessary to support them “would have been used locally instead of being exported” (*Derangement* 107). Ghosh concludes that one of the great injustices of imperialism is that it almost certainly postponed the current environmental crisis by fettering Asia’s access to some of the key technologies of the carbon economy, and social justice demands that the poor of the global south deserve, now, to access the wealth afforded by an uninhibited carbon economy, but that to do so at this moment would also ensure their destruction (*Derangement* 110-111). After all, the vast majority of the world’s population that will suffer the most from climate change lives in Asia (*Derangement* 88). This tension leads Ghosh to contend that “the continent of Asia is conceptually critical to every aspect of global warming: its causes, its philosophical and historical implications, and the possibility of a global response to it” (*Derangement* 87). Ghosh’s argument builds on the earlier work of Madhav Gadgil and Ramachandra Guha, who emphasize that not only was the global south environmentally exploited during the era of colonial imperialism, but the costs of environmental

degradation continue to be exported to already vulnerable populations in and around the Indian subcontinent (121-2). Colonial (and neo-colonial) mechanisms continue to deprive most South Asians of the wealth necessary to manage the ongoing threats of climate change, artificially depress the costs of labor to further drive the modern incarnation of capitalism that has largely driven the climate crisis, even while geography has made Asia particularly vulnerable to rising sea level, drought, and more virulent storms.

The impetus to focus specifically on the South Asian postcolonial novel in English is multiplex, and one aspect is purely logistical: in addition to the rich example of decolonization and its aftermath provided by the large and respected body of South Asian English novels, it is also the archive in which I am best trained. As it is common in the field of postcolonial studies to address both novels written by writers hailing from South Asia (India, Pakistan, Bangladesh, and Sri Lanka) as well as those written by transnational writers with ties to South Asia, the field encourages the examination of the effects of migration and globalization while remaining regionally and contextually grounded. By focusing on only the novel in English and not in other vernacular languages, this project may be of greater interest to readers beyond South Asia.

This project contributes to an already rich field of postcolonial ecocriticism particularly through its focus on how creative writers and theorists should collaborate to create literature that can most effectively communicate the urgency of climate change action. Although postcolonial ecocritics have also focused on the relationship between the environmental humanities and postcolonial theory, their audience hitherto has been overwhelmingly academic. In *The Future of Environmental Criticism*, Lawrence Buell notes that despite interdisciplinary projects and pedagogical success within the academy,

ecocriticism has still seen “relatively modest lateral percolation” into the broader public imaginary (132). While Buell acknowledges the importance of creating a constellation of intellectual writing that can help inspire further inquiry into the relationship between the humanities and the environment, some critics have been significantly harsher in their condemnations of such academic sodalities. Elizabeth Ammons contends that writing to a singular specialized discourse community not only costs the humanities their credibility, but also enables the “production of endless critiques of power relations without any actual political engagement” (x, 10). Postcolonial ecocritics are uniquely qualified to decipher which rhetorical strategies most effectively allow the public to engage with issues of environmental degradation and climate change, and more work must be done to effectively communicate those findings to ecologically minded artists and the public more generally.

It is important to note that this is an oversight that scholars developing the field of the Environmental Humanities are currently working to rectify. Nixon himself has worked to engage with the general public, creating the “Anthropocene Slam,” in which scholars and artists contribute objects which are representative of the epoch of anthropogenically motivated climate change.¹⁰ Anthropologist Anna Tsing has

¹⁰ The term “Anthropocene,” which was popularized by atmospheric chemist Paul Crutzen and biologist Eugene Stoermer in 2000, refers to a new, current epoch in which Earth’s planetary systems have been and are being altered by human activity. The term has been much maligned as an environmental buzzword rather than a formal scientific term. Nevertheless, the Anthropocene is gaining credibility in serious scientific circles. In 2017, members of the official Working Group on the Anthropocene, authorized by the International Commission on Stratigraphy, which is the largest and oldest constituent scientific body in the International Union of Geological Sciences, lobbied for the scientific formalization of the term. After reviewing the body of published arguments against the formalization of the term, the group concluded:

In response, we contend that the Anthropocene is a functional term that has firm geological grounding in a well-characterized stratigraphic record. This record, although often lithologically thin, is laterally extensive, rich in detail and already reflects substantial elapsed (and in part irreversible) change to the Earth System that is comparable to or greater in magnitude than that of previous epoch-scale transitions. The Anthropocene differs from previously defined epochs in reflecting contemporary geological change, which in turn also leads to the term’s use over a wide

collaborated to develop digital projects like matsutakeworlds—a storytelling archive concerning matsutake mushrooms—that reach beyond the academy to make visible scientific, ecological, and commercial relationships to vulnerable bioregions and species. These are but two of the scholars who are working to move beyond the academy’s traditional insularity to collaborate with activists, artists, and the general public. It is my hope that further analysis of the rhetorical role of literature in communicating issues of climate change, environmental degradation, and social and environmental justice will further expand this burgeoning field.

Although postcolonial ecocriticism has done much to show the link between environmental and colonial exploitation, the ways in which literary representations of those mutually informing histories shape (or fail to shape) responses to present-day environmental problems has been largely under-theorized. While literature has the capacity to foster imaginative engagement with overwhelming real-world issues, not all literature proves effective. The burgeoning genre of cli-fi, or literature dedicated to climatological and environmental concerns, has received widespread criticism for being overtly didactic, pandering, or implausible. Similarly, the so-called “postcolonial” novels that prove most internationally profitable are often critiqued as being little more than linked orientalist tropes that erase local diversity in order to be more widely accessible (M. Mukherjee 197-201). Creating art that effectively motivates extra-textual responses to wicked real-world problems is an immense and intricate task.

range of social and political discourse. Nevertheless, that use remains entirely distinct from its demonstrable stratigraphic underpinning. Here we respond to the arguments opposing the geological validity and utility of the Anthropocene, and submit that a strong case may be made for the Anthropocene to be treated as a formal chronostratigraphic unit and added to the Geological Time Scale. (Zalasiewicz et al. 206)

This project's overall goal is to assess which specific rhetorical strategies can most successfully engage the public imaginary with issues of environmental and social sustainability. To this end I propose a two-pronged approach: to consider evolving treatments of the environment, colonial oppressions, and literary solutions to myriad attendant problems in a sample of South Asian postcolonial novels, and to analyze value added to such cultural documents through careful analysis of a wide variety of paratexts. As defined by Gérard Genette, paratexts are the materials that lie at the threshold of a narrative, such as author interviews, reader reviews, or any "means by which a text makes a book of itself and proposes itself as such to its readers, and more generally to the public" ("Introduction" 261). These paratexts represent a transaction between the text and what lies beyond the text, and occasionally become the subject of primary analysis themselves.

My second chapter, "The Crest of Development's 'Terrific Wave': Pro-Developmental Rhetoric and the Means of Resistance," begins by looking to three wide-reaching environmentally engaged South Asian novels published over the last sixty years to assess some of the shifting attitudes toward the concept of sustainable development: Bhabani Bhattacharya's *Shadow from Ladakh* (1966), Bharati Mukherjee's *Jasmine* (1989), and Aravind Adiga's *The White Tiger* (2008). All three authors have used the English novel to interrogate the friction among the competing desires for economic development, a secure homeland, and ecosystemic health and welfare. Sustainable development is often upheld as a solution to the seemingly oppositional developmental goals of the Global South and those of environmentalists, but so-called "sustainable" development is often little more than neoliberalism in hemp clothing. This chapter

reflects on the ways in which these novels expose the pharmakon of sustainable development, and how reading them in concert may help explicate the nuances of shifting public sentiment on the subject over time.

All of the novels included in this chapter tackle the environmental implications of development from different angles. Bhabani Bhattacharya's *Shadow from Ladakh*, upon its reception of the Sahitya Akademi Award in 1967, was widely decried as ham-fisted pro-development propaganda. The novel hinges on the tension between an ascetic village built upon Mohandas Karamchand Gandhi's vision, Gandhigram, and a steel mill that seeks to expand onto the same site. Ultimately, the novel presents a non-solution in the form of harmonious co-existence, suggesting that there is room enough for both military-industrial development and non-violent traditional methods of inhabiting the land. The novel serves both to showcase the insidious ways that development, and the capitalist ideology that underpins it, is depicted as necessary for human welfare and by showcasing the risks authors take by publishing novels that are overtly didactic. It is my contention that *Shadow from Ladakh* and the vitriolic critical reactions to it demonstrate how difficult it can be to couch a political agenda within an artistically credible novel, even for an author as revered as Bhattacharya.

Whereas *Shadow from Ladakh* advances pro-developmental rhetoric, *Jasmine* and *The White Tiger* show how literature can expose the dangers of the myth that development can lift marginalized people out of poverty and simultaneously preserve the health of the environment. *Jasmine* links the failures of the green revolution to the disenfranchisement of small farmers in Iowa, subtly exploring how technological advances in agriculture serve to drive farmers into crushing debt and devastate once-

fertile farmland. In *The White Tiger*, Adiga recreates the world that has resulted from the Green Revolution, in which the rural poor either endure its environmental consequences in the countryside or migrate to overcrowded and polluted city centers. Adiga explicates how the Indian poor, forced to endure environmental evils in both urban and pastoral locales, are further marginalized by development while the wealthy elite profit from their un(der)paid sacrifice.

The chapter concludes by considering how the environmental warnings contained within these novels might be strengthened by the accompaniment of digital tools. I consider whether interactive digital StoryMaps might help the setting of the novels feel more local to global readers. StoryMaps allow the plot points of the novels to be mapped onto renderings of the extra-textual world alongside propaganda that seeks to quell concerns about the environmental implications of industry and development, news accounts and scientific reports about those same environmental consequences, and local activism in response. I contend that the collaboration between digital tools like StoryMaps and environmentally oriented postcolonial novels may effectively challenge the propaganda surrounding “sustainable development.”

In my third chapter, “The Activist Author: Paratexts and the Novel in the Anthropocene,” I examine the ways in which explicitly activist novelists with ties to South Asia have carefully constructed authorial personae that further propose solutions to the environmental problems they identify in their novels. This chapter will build on the work of Sarah Brouillette, who argues that postcolonial authorial identities and corpora undeniably influence the reception of their literary works (12). For Brouillette, the purpose of considering authorial paratexts is to view the author as a construct, co-created

by the author and the reading public, that shapes how an author's work is received (44). Brouillette crafts a compelling argument that postcolonial writers' international success depends upon their credible affiliation with their region of origin. I expand on this within the context of environmental postcolonial novels, examining how authorial activism impacts, alters, and expands upon the imaginative work begun in novels that figure around humanist and environmental problem solving. Just as postcolonial authors are expected to enhance the credibility of their novels with personal backstory, so, too, are environmentally invested authors expected to supplement their literary considerations of environmental injustice with extratextual action. None of this is to say that scholars should redeem an antiquated method of analysis that aspires to unveil a text's hidden "meaning" through biographical interpretation – my goal in recuperating the "author" is instead intended to assess the ways in which the threads of carefully manufactured authorial biography can supplement the novel genre and influence reader reception.

In this vein, I highlight the works of two writers: Amitav Ghosh and Indra Sinha. Ghosh expanded upon his environmentally oriented novel *The Hungry Tide* both with real-world activism and with *The Great Derangement*, his non-fiction consideration of the capabilities of fiction texts to adequately grapple with climate change and the relationship of climate change to colonialism. Indra Sinha, whose *Animal's People* helped communicate the human and environmental toll of the Bhopal chemical disaster, has bookended his literary efforts in Bhopal with extensive fundraising and by sponsoring non-fiction research in an effort to compile sufficient evidence to force Dow Chemical to make monetary reparations to victims and fund clean-up efforts. Sinha and Ghosh have both worked to showcase their activism alongside their literary efforts, which can now

scarcely be separated. Rather, both authors seem to invite readers to examine the full compendium of their efforts to rectify environmentally and socially devastating philosophies and behaviors. Ghosh himself has noted that his activism is, to some extent, designed to supplement the ways in which the novel limits engagement with climate change. Describing authors Paul Kingsnorth and Arundhati Roy as leading climate activists, he laments their lack of literary engagement with climate change, alongside his own:

I too have been preoccupied with climate change for a long time, but it is true of my own work as well, that this subject figures only obliquely in my fiction. In thinking about the mismatch between my personal concerns and the content of my published work, I have come to be convinced that the discrepancy is not the result of personal predilections: it arises out of the peculiar forms of resistance that climate change presents to what is now regarded as serious fiction. (*Derangement* 9)

Ghosh has chosen to counteract the challenges of communicating about climate change in literary narratives through non-fiction efforts that reference the omissions within his literary works explicitly; Sinha has done so by publicizing his real-world efforts to remediate the environmental and humanitarian injustices that have afflicted Bhopal, the real-world analogue for his fictional Khaufpur.

In my fourth chapter, “Speculative Diasporas: Hari Kunzru’s Historical Consciousness, the Rhetoric of Interplanetary Colonization, and the Locus-Colonial Novel,” I narrow my focus to thoroughly interrogate an ongoing pre-colonial moment in human history. Two complex artifacts form the nucleus of this chapter: Hari Kunzru’s

Gods without Men and the official materials of several entities that propose plausible manned Mars missions in the near future. Plans for interplanetary migration, coupled with Kunzru's novel that looks both forward to interstellar migration and backward to the complex terrestrial history of diaspora, forms a particularly potent case study of the ways literary representations might both reflect and influence real-world responses to social and environmental concerns. Proposed missions to Mars are currently poised to export the same model of colonization that has led to so much human and environmental injustice on Earth, and which has partially motivated planetary exodus in the first place. It is my contention that literary narratives might successfully change the course of interplanetary colonization, but only if they challenge the confines of the novel genre.

Others have theorized the revolutionary literary techniques employed by Kunzru's 2011 novel, but few have considered their potential for showcasing the ways in which cyclical histories coincide and overlap to maintain practices of environmental devastation. Kunzru's novel uses a three-pinnacled rock formation in the Mojave Desert as its focal point, and the chapters jump point of view, era, and place using the pinnacles as an orienting device. The result is essentially a biography of a geological feature, with surrounding human drama that models how the species interacts with the environment. Although there are myriad narrative arcs to *Gods without Men*, I focus particularly on the storyline of the Ashtar Galactic Command, a U.F.O. cult dedicated to healing the earth of its human-caused woes, and various "saucer people" from multiple periods in the cult's history. As members of the U.F.O. cult speculate about the ways in which interstellar colonization will resolve their social and environmental concerns, Kunzru incisively condemns their plan by emphasizing a near-universal human tendency to exploit any

environment available. Kunzru's novel is a model of the ways in which literature can remind readers of a fraught colonial history in order to guide future expansion and underscore the necessity of ecoystemic consideration. I have identified *Gods without Men* as an ideal example of what I have termed the locus-colonial novel: a novel that decenters the human, situating place at the fulcrum of a work of historical fiction, to examine the complex relationships among different human groups and the planetary systems upon which they depend. The locus-colonial novel telescopes out over immense periods of time – far too vast to be beholden to any one character or group of characters – in order to make visible widespread patterns of exploitation and destruction. It is my contention that locus-colonial narratives like Kunzru's may help illuminate the destructive patterns that must be interrupted if Earth is to remain habitable for the foreseeable future, or even if planets like Mars are to be colonized sustainably.

Kunzru's historically informed critique of both global and interstellar imperial expansion is particularly salient when read in conversation with the expansionist rhetoric of proposed manned Mars missions: the Mars One mission, which proposes to begin the development of a human settlement on Mars by 2031; NASA, which is planning a manned mission to Mars in the 2030s; and SpaceX, which intends to establish a settlement on Mars in the year 2024. The promotional materials of all three organizations of aspirational Martians reveal a fascinating logical disconnect: they simultaneously recognize the imminent threat posed by human-caused climate change and propose to recreate the same conditions in their chosen destination. The decision to avoid linking Mars missions to environmental circumstances on Earth is particularly interesting because all three entities have engaged in environmental education and activism in other

arenas. The Mars One website maintains that the mission “can greatly improve...sustainability efforts on Earth,” gesturing toward necessary recycling systems and solar panel technology (“Will the Mission”). NASA hosts a public webpage on the causes of climate change that opens with an acknowledgement that most climate scientists agree that climate change is the result of human behavior (“Scientific Consensus”). Elon Musk, the CEO and lead designer of SpaceX, manages other business ventures such as Tesla Motors Inc. and SolarCity that focus on alternative energy and sustainability issues. Moreover, he has publicly said that if governments continue to rely on fossil fuels humanity may face consequences of “more displacement and destruction than all the wars of history combined” (Thompson). The people involved with Mars One, NASA, and SpaceX clearly recognize that climate change and environmental degradation threaten Earth’s habitability, and they admit humanity’s complicity in such issues – but they notably avoid doing so in their materials concerning planetary colonization. Instead, all three entities describe the trip to Mars in idealistic terminology reminiscent of the space race: the trip to Mars is “in the spirit of discovery,” an “evolutionary imperative,” or for the sake of “progress” (Daines; Musk; “Why should we”). By omitting the ways in which terrestrial climate change is a driving mechanism for interplanetary colonization from the narratives of the Mars materials, all three organizations make it possible for people to imagine that leaving Earth would automatically make climate change a non-issue.

In light of such oversights, it is more imperative than ever that we find the means to expose how colonial histories have driven climate change and environmental destruction, and I argue that locus-colonial novels and digital tools might help to do so. The

implications of Mars colonization narratives that ignore environmental issues on Earth are already becoming evident: current plans for settling Mars all depend upon intentional climate change, and many proposed models seem destined to replicate the same issues that are currently threatening ecosystems on Earth. Mars is by far the most hospitable planet in nearby space, but Mars is not currently capable of supporting human life: every mission to settle Mars is contingent upon the intentional reconfiguration of planetary conditions the likes of which never took place on Earth even in the midst of the most aggressive imperial campaigns. To colonize Mars is to terraform it. Literary treatments of colonialism that reveal historical patterns of social injustice and environmental degradation may disrupt such patterns, and literary theorists must analyze such texts to reveal the dangerously flawed ideology that too often leads to mass human displacement and migration. As the first SpaceX cargo mission is set to depart for Mars within four years, the need for historically aware, environmentally oriented examinations of colonialism is urgent.

In my conclusion, “Final Thoughts: *Colonize Mars* and the Locus-Colonial Novel in the Digital Age,” I expand the consideration of StoryMaps begun in chapter one to imagine how a digital locus-colonial novel might grapple with the environmental factors that drive plans for Mars colonization and that will shape human colonies on Mars should they ever come to exist. To fully explore this potential, I have built a preliminary version of such a novel, using narratives generated through crowd-sourcing that explicitly link environmental devastation on Earth with plans for Martian colonization, and overlaid onto a 3D rendering of the surface of Mars. This chapter explores the methodology and efficacy of such a project, and posits that digital narratives may help to enhance and

disseminate more traditional literary models of environmental activism.

In *The Great Derangement*, Ghosh concludes that current cultural output is largely failing to grapple with the implications of climate change. He writes:

In a substantially altered world, when sea-level rise has swallowed the Sundarbans and made cities like Kolkata, New York, and Bangkok uninhabitable, when readers and museum-goers turn to the art and literature of our time, will they not look, first and most urgently, for traces and portents of the altered world of their inheritance? And when they fail to find them, what should they—what can they—do other than to conclude that ours was a time when most forms of art and literature were drawn into the modes of concealment that prevented people from recognizing the realities of their plight? Quite possibly, then, this era, which so congratulates itself on its self-awareness, will come to be known as the time of the Great Derangement. (11)

Ghosh charges artists and authors with thoughtfully developing meaningful ways to influence the public imaginary in regards to egalitarian environmental action. In my quest to determine if and how novels can encourage readers to respond meaningfully to climate change, I have concluded that innovative narrative forms – including hybrid forms such as novels coupled with digital projects, non-fiction resources, and authorial paratexts, along with genre-busting experiments that decentralize human actants – are best equipped to rise to the challenges presented by the Anthropocene. I hope that this project might encourage productive dialogue among artists, creators, academics, policy makers, and the global, non-academic community. Conscientious narratives can create an imaginative space in which to collectively develop solutions to the complex web of social, economic,

and increasingly environmental problems that plague postcolonial South Asia (and its transnational populations) and serve as a powerful form of environmental and social activism.

CHAPTER II

THE CREST OF DEVELOPMENT'S "TERRIFIC WAVE": PRO-DEVELOPMENTAL RHETORIC AND THE MEANS OF RESISTANCE

In this chapter I consider the way that three South Asian novels, written and published over the past 60 years, interrogate sustainable development and its human and ecosystemic consequences: Bhabani Bhattacharya's *Shadow from Ladakh* (1966), Bharati Mukherjee's *Jasmine* (1989), and Aravind Adiga's *The White Tiger* (2008). All three authors have used the English novel as a forum to tease out the tensions of the drive for economic development, distress over human displacement, and anxiety over environmental degradation. My focus is on the ways in which these novels cultivate and question hope in sustainable development, how their grouping can reveal shifting attitudes on the subject, and whether these lessons might be strengthened by the accompaniment of digital tools.

Sustainable development has long been heralded as one way to syncretize the developmental goals of aspiring economic powerhouse countries within the Global South and environmentalists. Sustainable development has become a mainstay of the promotional materials of international NGOs, multinational conglomerates, and global governments.¹¹ Wide-reaching international organizations like the United Nations list sustainable development as one of their primary goals, extolling its virtues. The U.N.'s description of "What We Do" states that "sustainable development – development that

¹¹ As an illustrative example, the UN's Sustainable Development Goals (SDGs) came into effect on January 1, 2016, and specifically attempts to align and codify development efforts by "governments, private sectors, civil society, and citizens alike" ("Sustainable Development Goals"). These SDGs are so wide reaching as to be explicitly referenced by organizations as diverse as The International Committee of the Red Cross, which describes a focus on sustainable development as "a moral duty," to Coca-Cola, which emphasizes that SDGs will likely "benefit everyone from individuals to governments and business" (Perez).

promotes prosperity and economic opportunity, greater social well-being, and protection of the environment – offers the best path forward for improving the lives of people everywhere” (“Promote Sustainable Development”). Despite the ubiquity of pro-developmental rhetoric, however, the evidence increasingly indicates that the environmental costs of widespread development ultimately inhibit attempts to increase the welfare of the poor in the Global South.

Despite its branding, sustainable development is not without adverse environmental consequences. If the end goal of capitalism is growth and the resources of Earth are finite, sustainable development presents something of a paradox; ecological sustainability and capitalist economic development are always at odds. As Oswaldo De Rivero notes, if economic growth is the only barometer for development, the “gurus of the myth of development” miss “the profound qualitative cultural, social, environmental and structural dysfunctions that prefigure the non-viability of the underdeveloped quasi nation-states in the new millennium” (117). Arturo Escobar takes an even more adversarial stance against capitalist models of development, contending that the implication that development can be environmentally sustainable is largely false:

The epistemological and political reconciliation of economy and ecology proposed by sustainable development is intended to create the impression that only minor adjustments to the market system are needed to launch an era of economically sound development, hiding the fact that the economic framework itself cannot hope to accommodate environmental considerations without substantial reform. (*Encountering Development* 197)

Free market Capitalism, rooted as it is in the extraction and exchange of natural resources

at ever-increasing rates, is inherently unsustainable as Earth's reserves dwindle, become contaminated, and diffuse under the pressure of rapidly growing human populations. Sustainable development is so dangerous not because it is more environmentally exploitative than more traditional models of development, but because it falsely presents itself as ecologically benevolent, shoring up support for a fraught capitalist system.

Sustainable Development Goals appear, at first glance, gasp-inducingly expensive, but the financial and ideological benefits may outweigh the costs for the developed world.¹² As critics of development like de Rivero, Escobar, and Wolfgang Sachs have suggested to various degrees, when economically developed nations offer aid to regions that are rural or impoverished, it is always with their own interests at heart (Huggan and Tiffin 28). The dominant model of development authorizes a few wealthy nation-states to direct the global poor to conform to a primarily western lifestyle, which affords some margin of discursive control. Simultaneously, branding development as a “sustainable” way to benefit all relevant parties permits wealthy multinational corporations to continue extracting and disproportionately profiting from resources in regions that are often left grappling with resultant ecological devastation.

When Bhabani Bhattacharya published *Shadow from Ladakh* in 1967 the phrase “sustainable development” had yet to come into popular usage, but the novel anticipates the issue presciently. The plot is driven by proposed development and the tension between corporate interests, the welfare of local populations, and environmental integrity. The ways in which Bhattacharya attempts to resolve that tension, along with the popular

¹² Guido Schmidt-Traub, the Executive Director of the UN Sustainable Development Solutions Network, estimates that \$1.4 trillion in incremental financing will be necessary in low- and lower-middle-income countries, though he's quick to claim that those goals are achievable if “governments set the right policy frameworks to mobilise private investments, and domestic as well as international public resources are mobilised for long-term investments in sustainable development.”

and critical reception of the novel, warrants significant consideration.

Of the authors I'll discuss in this chapter, Bhattacharya is arguably the least read in the United States. Nevertheless, he belonged to a celebrated coterie of Indian English realists, and Indian critics often compare his work to Mulk Raj Anand, Raja Rao, and R. K. Narayan (R. Kumar 337). Bhattacharya was deeply influenced by Mahatma Gandhi, and his extensive knowledge of Gandhian philosophy sometimes results in him being misunderstood as little more than a ventriloquist. As Paul Sharrad writes in his recent consideration of reception of Bhattacharya's works, the vast bulk of criticism focuses on his use of Gandhi (10). But Bhattacharya's political stance in *Ladakh* is decidedly more complicated than a simple parable depicting Gandhian life: instead he uses the novel to tease out the finer points of the identity crisis facing early Independent India. In "Novel as History — A Study of Bhabani Bhattacharya," Manmohan K. Bhatnagar articulates the socio-political implications of *Ladakh*:

...two symbols present the two extreme options: the spinning wheel or small, self-reliant cottage industries and steel or mechanized, heavy industries. The novel renders in artistic terms, with a rigour of logic without compromise, a historic moment of choice for the policy-makers of the very beginning of Independent India: the simple, self-contained, self-sustained, self-reliant village economy with cottage industries or the highly organized, heavily mechanized, internationally dependent economy of a giant size. The implications are no less human and universal than economic and political. (183)

Bhatnagar views Bhattacharya as a "political chronicler," whose novels situate political

milieus in a matrix of human emotion and sentiment (“Novel as History” 171).

Considering Bhattacharya’s association with Gandhi, his readers anticipated that *Shadow from Ladakh* would extoll the virtues of rural life over the benefits of development, but *Ladakh* is notable for its surprising ideological conclusions.

In *Shadow from Ladakh*, Bhattacharya introduces Bhashkar Roy and Satyajit Sen as thinly veiled avatars for Nehruvian and Gandhian ideologies respectively.¹³ Bhashkar is a young American trained CEO of a steel company whose stated goal for India is “rapid industrialization” (35). When Bhashkar arrives in Gandhigram, a village set up on Gandhi’s model, his immediate instinct is to bulldoze a beautiful and sustaining mango grove nearby, and ultimately develop the totality of the village into an industrial site.¹⁴ Gandhigram’s leader, Satyajit, is a Gandhian disciple and spiritual guru, and his desire to preserve the land, maintain traditional Indian ideals, and avoid consumptive waste places

¹³ Gandhian philosophy is quite complex, although it is usually defined by some of its more basic tenets, including a commitment to non-violence, and for “prioritizing modes of development that are non-disruptive, suitable to local conditions, and uplifting for the entire community, not merely a few sections” (Brown 640). Furthermore, Gandhism is indebted to John Ruskin’s anti-industrial utopianism, particularly the premise that skilled and unskilled labor are of equal value, and that a life of labor is one of great value (Brantlinger 467). It is similarly difficult to distill the foundations of Nehru’s ideology, although Bhattacharya, and by extension this chapter, is mostly concerned with his thoughts on economics, which focused on industrialization with little regard to environmental consequences. Perhaps even more importantly, Nehru was committed to automation, investing heavily in “machines to make machines” in heavy industry sectors (S. Kumar 167).

¹⁴ Although the demolition of the mango grove is certainly viewed as a threat to subsistence foraging and farming in Gandhigram, the novel also implies that exposure to both forest and pastoral environments is necessary for human welfare. The description of Santiniketan, where Satyajit worked as a teacher early in his career, provides relevant insight into this aspect of the dispute over the grove:

There could hardly be a more attractive setting. Santiniketan was away from the distractions of cities. It was a land of red earth and fierce gales, and a tiny streamlet passed meandering not far from the campus edge. There were groves of fruit trees, and sweet-scented shrubs and flowering creepers broke the sternness of the scene. Classes were held in tree shade, the boys and girls seated on their own reed mats, and the teacher on a foot-high pedestal. It was not rare for a class to stop when a songbird started warbling in the branches overhead; the pupils would get more from that voice than from the teacher. (15)

Satyajit perceives a clear difference between “man” and “nature,” but also contends that humans have much to learn from the “natural” environment, and that in return humans have an “obligation” to steward the land (31). These guiding principles lead Satyajit to comment “What symbolism!” upon learning that “A blast furnace would be built on the site of the mango grove” (31).

him immediately at odds with Bhashkar. Bhattacharya attempts to resolve this tension through Satyajit's beautiful and brilliant daughter Sumita.¹⁵ Sumita, depicted as the Gandhian ideal of a pure and ascetic maiden, is torn between her attraction to Bhashkar and her admiration for her father. The love triangle is set against the backdrop of the Sino-Indian conflict of 1962, which is presented as further justification for development. As China encroaches into Ladakh, both men stand more firmly in their previous positions: Bhashkar that development is critical for defense, Satyajit that the non-violent philosophy Gandhigram represents is essential to Indian survival. The novel resolves, all too neatly, when Bhashkar agrees to build the steel mill nearby instead of directly upon the site of Gandhigram, Satyajit recognizes that Gandhian asceticism is too extreme for the modern era, and Sumita and Bhashkar acknowledge their love for one another. The "compromise" presented by the novel's resolution, however, is actually a condemnation of Gandhian philosophy in the modern era: the steel mill is being developed to produce weapons that will flout the tenet of non-violence, and Satyajit's campaign against western-style industrialization is reduced to a particularly self-righteous bout of nimbyism.¹⁶ The novel's conclusion is a conspicuous triumph of pro-development ethos.¹⁷ Bhattacharya's seeming betrayal of Gandhian ethics, so out of character, both confused and infuriated the literary establishment.

¹⁵ Sumita's name is onomastically relevant, and should serve as a clue to her role in the novel. In Hindi Sumita means "friendly."

¹⁶ Nimby, previously an acronym for Not In My Back Yard, has evolved to become a pejorative term indicating that an individual or community is resistant to development or environmental desecration only because of its personal proximity.

¹⁷ It is important to note that at least two critics interpret the novel's conclusion differently, as a model of productive compromise. Paul Verghese laments that the novel "ends on a weak note of the co-existence of these two ideologies" (qtd. Chandrasekharan 125). Malta Grover writes that Bhashkar and Sumita's union represents "the integration of spiritualism with materialism, town with country, asceticism with aestheticism, past with present and East with West." (46) These views are decidedly in the minority.

Bhattacharya was a beloved figure of Indian arts and letters, but *Shadow from Ladakh*, his fifth novel, was not a critical success. Bhattacharya lamented at the time “My latest novel, *Shadow from Ladakh*, is not a favourite of reviewers, but that is the one I enjoyed most” (qtd. Chandrasekharan 126). Although Bhattacharya is understandably defensive on this point, “not a favourite” is an egregious understatement. Reviewing the novel for *Mahfil*, Patricia L. Sharpe wrote:

To call Bhabani Bhattacharya’s *Shadow from Ladakh* a pretentious failure is to put oneself in the position of hacking away at a rope bridge over a chasm that seemed to need bridging at a time when the bridge-maker, still adding a few touches here and there, may very well go crashing down with his handiwork. One doesn’t want to jeopardize all that work at this late day and yet one also feels bound to warn that the bridge is, after all, an unreliable passage to nowhere. (134)

Sharpe’s anxiety that the near-universal hatred of the novel might be enough to topple one of the most esteemed novelists writing in English in India at the time is not unfounded. Other reviewers were less cutting in their critiques, but not significantly more generous. Kirkus Review opined “the story lacks the weight and poise of much writing coming out of India today” (“Review”).¹⁸ Paul Verghese wrote: “the lack of depth in his treatment of problems of human relations is a weakness of his art” (qtd. Chandrasekharan 125). Promising interest in Bhattacharya’s corpus, which led him to believe he would have significant international literary success, tapered off after the release of *Shadow*

¹⁸ Despite repeated attempts, tracking down reviews of *Shadow from Ladakh* in India has been largely fruitless. To this end I’ve drawn my conclusions about Indian critical reception from interviews with Bhattacharya himself and mentions by Western reviewers. Correspondence with local newspapers active both in the 1960s and the present lead me to believe that archives no longer exist from the 1960s, and Bhattacharya’s publisher at the time has no record of reviews, either. Several Western forums have preserved their reviews from the book’s release, though it is unfortunate that I have been unable to see their Indian comparators.

from Ladakh. As Sharrad notes, Bhattacharya had extremely limited reception outside of India, despite having a prestigious Australian publisher with well-established transnational networks (10). *Shadow from Ladakh* was an almost unmitigated failure, and one that undeniably interfered with Bhattacharya's ascendance as a global literary luminary.

It is important to note that the critical failure of *Shadow from Ladakh* was offset, as much as that sort of thing can be, when India's National Academy of Letters awarded it the prestigious Sahitya Akademi Award. The prize, often compared to the American Pulitzer, is the highest literary award of India. Relevantly, the Indian government inaugurated the Sahitya Akademi in 1954, and although it prides itself on being an autonomous institution, the Akademi is still supported by the government and the ties there remain strong ("About Sahitya Akademi"). For many, the prize smacked of a government agency choosing propaganda over art. Sharpe summarizes the scandal cruelly in her review, writing:

If *Shadow from Ladakh* has, nevertheless, brought its author official recognition and acclaim in the form of the Sahitya Akademi Award this past year, there is nothing to wonder about. Reading it probably made literary officialdom feel very good. Unsolicited propaganda from an established and respected author is a rare piece of corroboration. Not that a decent case cannot be made for the superiority of India's position vis a vis [sic] China these days. Only Bhattacharya does not take the Himalayan range of implications involved therein seriously enough to explore them on a level transcending the clichés and epithets one expects from second-level politicians, though not from any but the trashiest novelistic

panderers. (134)

Sharpe's allegations distill the reason for my interest in *Shadow from Ladakh*, an all-but-forgotten novel, now long out of print, published more than half a century ago.

Bhattacharya's novel wasn't just disliked – it was disliked by the public because it came across as pro-industrialization propaganda, and lauded by a governmental agency because it supported the interests of the military-industrial complex.

Bhattacharya vociferously denied that *Shadow from Ladakh* was intended to indoctrinate its readers to the Indian military agenda. In a 1968 interview with *Mahfil*, Bhattacharya said:

Shadow from Ladakh is certainly not propagandist. The digression about Gandhi's early life is meant to illumine Satyajit who had taken upon himself the terrible hard commitment to build himself in his master's image. As for Maoist China, I felt that some background information would help the foreigner (knowing so little about the Sino-Indian dispute) to see events in the correct perspective. (46)

Of course, disseminating biased information in the interest of a specific political perspective is one definition of propaganda, which suggests that Bhattacharya's defense is largely nominal. In a cable from the Chinese foreign ministry from November 15, 1962, officials suggest that propaganda was a leading strategy for garnering international support for their position, writing "In addition, the embassy should do propaganda work with a plan in mind, such as distributing propaganda materials and contributing articles to some newspapers" (Ministry of Foreign Affairs). Even if there were no such specific instructions sent to Bhattacharya from the Indian ministry, the effect of his project remains much the same.

For all of Bhattacharya's insistence that *Ladakh* is not propaganda, the novel itself is a virtual how-to manual for changing the paradigm on the heavily mechanized industries needed to support development in India. Sumita, the ultimate avatar for populism and anti-industrialization, spends the first half of the novel railing against the menace of Steeltown only to acquiesce fully by the novel's resolution. Bhashkar is cognizant that any mechanism that softens Sumita's stance on industrialization will also work on India as a whole, and much of his internal dialog is spent thinking of how to shift her loyalties. As he considers her position, he realizes that their dueling ideologies cannot co-exist:

She was India, wasn't she? The India of Satyajit. The India that had to be transformed. It wasn't enough to fight Satyajit on the economic front. The battle must touch every facet of living. The machine age asweep over the country could give no quarter to repressions. (127)

In the novel, Bhashkar's mission is explicitly stated: to win over the hearts and minds of the Indian people so that he, and his company, are free to move forward with the "rapid industrialization" of India (35). Sumita serves as a test case, to see which rhetoric is most effective in his mission.

In some ways, the pursuit of the most persuasive rhetoric in *Shadow from Ladakh* is quite successful, even while it fails abysmally in others. *Ladakh* operates on two levels: its plot showcases how pro-industrialization rhetoric can be effective while the novel is itself somewhat ham-fisted pro-industrialization rhetoric. *Ladakh's* lack of popular and critical success reveals it to be a largely ineffective tool in the campaign to make the people of India embrace widespread development, while Bhashkar's technique within the

text is quite effective, and mimics the strategy adopted by so many real-world developers.

Bhashkar, even as avatar for the big-city industrialist, is depicted sympathetically: perhaps even heroically. In the novel, he is a pragmatist who only has India's best interests at heart. Bhashkar thinks of steel as economic progress, certainly, but also as a means to "fight poverty and hunger" (30). Bhashkar contends that:

steel has gained a second meaning. It stands for our country's freedom. This is an inescapable fact, not to be changed by wishful thinking. Development plus defense—a compulsion of our current history. To meet the demands is far from easy. We have no choice, though. (30)

Pondering India's explosive birth rate, Bhashkar argues that even if "babies would not eat steel," steel still represented their wellbeing as "the spine of the economy" (37). It is easy to come to his side: there's a war on, and he feels strongly that he's doing his civic duty. Moreover, much of Bhashkar's logic is paired with the more attractive progressive Western values, including gender equality. Bhashkar argues that development is good for women, allowing them greater independence and autonomy (95). Superficially Satyajit, too, seems to be a champion of female autonomy — he delegates some of his intellectual labor to his brilliant wife, Suruchi, and his daughter — but his loyalty to traditional India ultimately serves as a tool of patriarchal subjugation. Satyajit refuses to allow the women in his life to be adorned by jewelry or other decoration despite their wishes, and his desire to attain an elite level of brahmacharya, chastity even within marriage, has deprived Suruchi of more children, which she desperately desires (21-5). Bhashkar's lust for "development" is linked to "progress," and juxtaposed against the kind of moralizing that reifies traditional gender roles.

Unfortunately, Bhashkar's more liberal politics distract from the ways in which development can devastate local communities. Bhashkar's stance that well-managed resources improve the well-being of the people isn't supported by the research. The evidence suggests that resource-wealthy nations are, more often than not, blighted by corruption and environmental devastation (*Slow Violence* 70). In his canonical book *Slow Violence and the Environmentalism of the Poor*, Rob Nixon describes how the oil industry specifically, representing the multinational corporations that specialize in resource extraction more generally, "typically brings few new jobs to the locals to replace old forms of communal subsistence jeopardized by fouled water, earth, and air" (71). As Nixon notes, this is in part because laborers imported from rival communities are less able to perceive the ways in which environmental degradation and the effects of climate change will adversely affect the region and its people. This model holds true for *Ladakh*, too; despite Bhashkar's insistence that Steeltown has the best interests of the Indian people at heart, and particularly the people of Gandhigram, he hires only one person from Gandhigram to work at his plant (*Ladakh* 158). Steeltown is an evergreen threat to Gandhigram's agricultural resources, and yet refuses to be a viable source of alternative income for its residents.

Sumita's rationale for resisting industrialization reveals a startlingly prescient understanding of the exploitative nature of resource-dependent multinational companies. Sumita is fully aware that Bhashkar's desire to annex Gandhigram is but a symptom of an ominous systemic movement that does not have the people's welfare at heart. Sumita argues that the mechanization that inevitably accompanies steel plants and their ilk hinders the people's ability to earn wealth and support themselves. She thinks:

The fight was with the system that welded human beings to the machines...

Mechanization, Gandhi had said, was inevitable when there was dearth of labor. It became needless and an evil when there was a surplus of hands. The problem in India was not how to find leisure for the teeming millions in its villages, but how to utilize their idle hours. (29)

Sumita, influenced by Gandhi's teachings, does not resist mechanization for its own sake, but for the ways in which it disenfranchises a people already struggling to find labor in a supersaturated marketplace. Bhattacharya clearly establishes that Sumita's loyalty is to the wellbeing of the people, not to dusty and outdated philosophies: her anxieties are not driven by thoughtless devotion to a martyred leader but by a justified fear that while industrialization drives down the cost of goods and services, it also depresses wages. Nearly 100 pages later, Sumita remains resolute, telling Bhashkar "We will resist you. We will die rather than lose ourselves" (124). Sumita's resolve, seemingly impervious to Bhashkar's initial sallies, begins to dissolve when it is weaponized against her: Bhashkar condemns her as "blind," "delusional," and unwomanly, and her desire to appear reasonable begins to chip away at her ideals (127).

The ideological implications of the novel's resolution are easily lost in a rapid, and largely anticlimactic, resolution to the Sino-Indian conflict. Throughout the novel, Satyajit has railed against violence, first seeking to lead his people on something of a suicidal peace march to Ladakh, and then, lacking the numbers and proper permits, settling for a hunger-strike that will almost surely kill him. Despite his efforts and his desire to be involved, however, the war is resolved, no thanks to his contributions (324).¹⁹

¹⁹ The Sino-Indian conflict is fascinating in part because of its speedy resolution and its lingering political implications. As Brigadier J.P. Dalvi writes: "The Sino-Indian conflict of 1962 was restricted to a small

Bhashkar, too, is caught short by peace, as the political impetus behind his expansion dissipates almost overnight. Simultaneously, the workers of the steel plant threaten a total strike if Bhashkar remains committed to expanding Steeltown into the mango grove (355-6). Finally threatened with a significant financial cost and limited political support, Bhashkar agrees to relocate the expansion away from Gandhigram, and Satyajit agrees to conclude his hunger strike. Within the novel, this resolution is heralded as a win for all involved parties, which masks how little has actually been achieved. Environmental devastation is relocated to another locale, development stalls, briefly, to proceed near someone else's village, and Satyajit is able to believe that his efforts were not entirely fruitless.

With the tension resolved, Sumita is free to acknowledge her love for Bhashkar, but the theoretically joyous merger is depicted with deep ambivalence. As Sumita acquiesces to her feelings, she thinks, "*Is this the terrific wave Nandini spoke about? The wave that sweeps you away on its crest—helpless?*" (359). It is little wonder that Sumita would think of her cousin Nandini's earlier description of love, for she describes the experience as something more awful than ecstatic. Nandini thinks of love as inescapable, uncontrollable, and ultimately destructive, saying of her brother: "A terrific wave will come one day and sweep him away on its crest—helpless" (307). K. R. Chandrasekharan notes that this description of love dismantles any misconception that Sumita will maintain fidelity to her previous ideals:

The very last words in the novel are words announcing that the ascetic girl trained by Satyajit has surrendered herself to 'the terrific wave' which stands for love and

fraction of the opposing armies; was fought in a small, remote corner of the border and lasted a mere month – with only ten actual days of fighting – and yet it is a fact that it did initiate profound changes in our international standing, domestic politics and economic progress" (qtd. Akbar 83).

fullness of life. Thus there is no question of tame co-existence. And the note at the end of the novel is not a ‘weak note’ but on the contrary a fanfare of trumpets announcing the birth of a new era. (125)

Chandrasekharan’s suggestion that Sumita’s surrender to the wave announces a new era is shored up by the novel’s use of similar oceanic imagery to describe the ebb and flow of public opinion. Suruchi notes that even the most effective leaders eventually surrender to the pressure of their follower’s demands, noting that “It had happened more than once that even Gandhi had no option left but to yield to the swift tide behind him, a tide of his own creating, and his plan to cry halt at a certain point of the national struggle was swept away” (214). In *Shadow from Ladakh*, love and politics leave little room for compromise.

Although *Ladakh* exhaustively details the particularities of the conflict between Gandhigram, Steeltown, and their respective leaders, the novel clearly establishes its characters and locales as metonymic representations of larger wholes, and the text demands to be read through such a lens. Bhashkar is commodified as “the Iron Man,” the engine behind rapid development (35, 63). Satyajit, as Gandhi’s disciple, is representative of his legacy, and his announcement that he will fast to his death for political reasons is lifted from history – identical to Gandhi’s (Bhattacharya 20, 44; Chandrasekharan 111). Sumita is repeatedly described as a representation of India at the cusp of a new era (122, 127). Satyajit and Sumita seek to protect the village of Gandhigram not simply because it is a village that is home to many people, but because “The apparently insignificant village was building up a model for the whole of India” – a model that stood in direct opposition to mechanization that both tethered humans to machines but which also diminished the need for labor, and therefore the ability of the masses to support

themselves (28-9). When read as avatars, the characters of *Ladakh* present Gandhism as anachronistic, its practitioners as easily distracted by small victories that obfuscate ideological crises, and its methods of non-violence and tradition as impotent against contemporary geo-political machinations. Bhatnagar, too, concludes that “Gandhian non-violence is presented as partly irrelevant and anachronistic” (“Message” 164). The novel’s insistence that its characters are more than individuals is so heavy-handed that nearly all analyses of *Ladakh* focus on its ideological implications, and rightly so. Sumita’s love for Bhashkar is akin to shifting political paradigms, and if she is a representation of India as a whole, her helpless surrender to Bhashkar is a win for industrialization and a great loss for Gandhian ecological empathy.

Ladakh’s overtly didactic, transparently political, and implausible plot, lead me to conclude that it itself is not effective propaganda, but my interpretation is certainly not universal. Bhatnagar, for example, contends that Bhattacharya’s political agenda is somewhat concealed by his commitment to character development and aesthetic appeal. Writing about *Ladakh* in “The Message and the Medium: A Study of the Ideological and the Individual in the Novels of Bhabani Bhattacharya,” Bhatnagar claims that the artistic presentation of Bhattacharya’s politics prevents him from being relegated to the ranks of a “purely proletarian writer” (165). He writes:

Bhattacharya’s characters mark the triumph of the artist in their creator. They are not bundles of ideological platitudes, grinding their maker’s axe, but mortals who have psychological compulsions to adopt a particular course of action. They feel the ideological battles on their pulse. They are psychological [*sic*] convincing, and it is their credible conduct from which we draw ideological conclusions. With the

objectivity of an artist Bhattacharya creates both positive and negative heroes, giving them all private motivations for their public deeds. (“Message” 165-6)

While I disagree with Bhatnagar’s assessment of this novel, I agree that the more plausible the novel, the more effective its persuasive impact. As Huggan and Tiffin emphasize, some of the merit of postcolonial and ecocritical writing stems from careful “negotiations between political imperative and aesthetic play” (33). If Bhattacharya’s ideological mission were couched in characterizations that seemed plausible to many readers, it may have been more compelling. It is for this reason that Bharati Mukherjee’s novel *Jasmine*, published in 1989, strikes me as being much more effective in its treatment of the implications of development.

Jasmine employs the story of a young Indian immigrant to the United States to interrogate the consequences of agricultural development worldwide. *Jasmine* details the impacts of the industrialization of agriculture in two settings that are commonly perceived as being drastically divergent: the Punjab and rural Iowa. Throughout the novel Mukherjee shines a spotlight on the psychological and physical violence that stems from the increasingly mechanized and corporatized farming practices in both locales, exploring the implications of a business model that prizes profits and expansion over sustainability and human welfare. As importantly, *Jasmine* juxtaposes spectacular violence and drama against the mundane banality of daily life, making at least some of the events of the novel feel both plausible and relatable to both the average American and Indian reader. By pairing a consideration of the consequences of development in both India and the United States, Mukherjee exposes the local and global implications of corporate greed, disguised as sustainable agricultural development, on the environment and those living in rural

agrarian locales. *Jasmine* makes it clear that in an era of global capital, there is no escape from the violence wrought by material scarcity.

Jasmine opens with the text's titular character as a young girl in the rural Punjabi village of Hasnapur. "Jasmine" undergoes many transformations throughout the novel and boasts a different name for each incarnation – she is first introduced as Jyoti, a brilliant student who is seemingly doomed to a life of domestic servitude as a dowry-less bride and late-born daughter.²⁰ At her mother's insistence, Jyoti is educated, even while her traditional father rails against it. After her father's death and the subsequent sale of his farm, Jyoti marries a modern man for love, and he renames her Jasmine. Her husband, Prakash, is accepted to an engineering program in the United States only to be killed by sectarian violence in the days before his departure. Jasmine determines to travel to his would-be college campus in Florida to perform Sati.²¹ Without a valid Visa, Jasmine is forced to travel as the ward of human traffickers, and she is brutally raped by her smuggler upon their arrival. In the aftermath, Jasmine takes on the traits of Kali, an incarnation of a goddess of destruction, and murders her rapist in an act that is both revenge and self-defense. She is discovered by an American woman, Lillian Gordon, a self-anointed patron saint of immigrants, who dubs her Jazzy and teaches her how to "pass" as American to avoid detection by INS. Jazzy moves to New York first to live with her husband's former teacher in an Indian immigrant community where she suffocates under the weight of nostalgia, then to work as a live-in nanny for an elite

²⁰ In the spirit of clarity, I will defer to the novel's title and call *Jasmine*'s main character "Jasmine" when speaking of her generally within the text. When she is embodying a specific incarnation, I will refer to her by the name she assumes specifically.

²¹ Sati is the practice of widows throwing themselves upon their husband's funeral pyres. While it is no longer practiced, it is heavily theorized in Gayatri Spivak's "Can the Subaltern Speak? Speculations on Widow-Sacrifice."

intellectual family. The family's patriarch, Taylor, renames her Jase, and after the collapse of his marriage, he reveals that he loves her. Although Jase reciprocates, she serendipitously catches sight of her husband's killer in Central Park, and flees to Iowa. There she takes a job as a teller in the local bank before becoming romantically entwined with her boss, a married, 50 year old banker who dubs her Jane. Jane moves in with Bud Ripplemeyer and begins building a family: the two adopt a Vietnamese son, Du, and Jane becomes pregnant, but she remains restless and dissatisfied with her life, and refuses to marry Bud despite his pleas. Her discomfort may stem from the consonance of the economic desperation of the local farming community and that of her youth; Jane is present the night a farmer shoots Bud for refusing to support his loan, leading to his paralysis, and also tries, unsuccessfully, to stop their neighboring farmer, Darrel, from committing suicide. In the novel's final scene, Taylor and his daughter Duff appear on her doorstep, and convince Jane to leave with them for California.

Within *Jasmine*, Mukherjee eviscerates the premise that technological advances in agriculture can bring salvation to struggling farmers. *Jasmine* recounts the plights of agricultural workers in both India and the United States, showcasing striking similarities on separate continents: in both places, farmers find themselves unable to bear the skyrocketing costs of GMO seeds, ever-more efficient modern equipment, and commercial fertilizers. Instead of blaming the corporations who wield increasing economic power over small farmers, however, the novel showcases a plethora of easy scapegoats; farmers blame drought, foreigners, and individual bankers without ever turning on the power structures that have made it nearly impossible to thrive in the cutthroat world of agriculture.

Mukherjee interweaves the Green Revolution, and its impact on the Punjab, into Jyoti's backstory. Observing the plight of farmers in Iowa, Jane is reminded of the farmers of her childhood: "When I was a child, born in a mud hut without water or electricity, the Green Revolution had just struck Punjab" (229). "Struck," which connotes violence and destruction, is an apt term for the Green Revolution, which was introduced as the technological salvation for the developing world, but which ultimately caused explosive and enduring damage to the local environment and subsistence farmers. In the now-canonical *The Violence of the Green Revolution*, published just two years after *Jasmine*, Vandana Shiva contends that although the Green Revolution led to initial gains in agricultural productivity, those gains were quickly offset by the ecological consequences of associated farming techniques. She writes:

The Green Revolution was based on the assumption that technology is a superior substitute for nature, and hence a means of producing limitless growth, unconstrained by nature's limits. However, the assumption of nature as a source of scarcity, and technology as a source of abundance, leads to the creation of technologies which create new scarcities in nature through ecological destruction. The reduction in availability of fertile land and genetic diversity of crops as a result of the Green Revolution practices indicates that at the ecological level, the Green Revolution produced scarcity, not abundance. (24)

Shiva goes on to argue that new, unpredictable ecological scarcity inevitably leads to social unrest and violence as well. Mukherjee's consideration of the Green Revolution is contemporaneous with a turning tide, as long-term studies began to reveal that the Green Revolution had failed to fulfill its promises of abundance and prosperity. Jyoti/Jane's

recollections of the Green Revolution support Shiva's analysis, contesting the supposed benevolence of Western technologies and those who bring them, instead suggesting that the infusion of outside agricultural interests did more harm than good.

Jyoti's descriptions of the Hasnapur of her youth indicate the ways in which the farmers who suffered during the Green Revolution came to blame outside influences and "foreigners." Local farmers are beset by scarcity that only foreign-educated outsiders seem able to survive. After Jyoti's father's death, her brothers sell "the desiccated thirty-acre family ground," unable to contend with topsoil "so dry it grays and crumbles like ash" (62). They sell the land to a man who had been educated in Western farming practices in "agricultural school in Canada," and thus earns the name Vancouver Singh. Vancouver Singh makes short work of reinvigorating the land with cutting edge technologies, planting a new kind of wheat and coaxing crops from the soil. Watching Singh walking the same paths as her father, but now with the land fecund, Jyoti "felt robbed. I felt disconnected" (63). In her rage, Jyoti's description of Singh focuses on his foreignness – his "funny foreign yellow raincoat and boots," his Canadian education, the rumors that his farm was a haven for Sikh nationalists like the Khalsa Lions, and his funding of an "American-style 'super bazaar'" (63, 71). Although Jyoti attributes Vancouver Singh's success to luck, others in the region become convinced that he is part of a nefarious global conspiracy (62). After all, the technological rewards of the Green Revolution have done nothing to support Jyoti or her family, instead benefitting elite and exotic interests. Matt Burkhart notes that "The influx of new wealth, agricultural methods, and commercial values introduced by figures such as Singh mark the initial moments of globalization's disruption and displacement of earlier agricultural orders"

(12-13). Profitable newcomers like Singh metamorphose into symbols of injustice and inequality for the local community, becoming the recipients of local ire and envy. The Green Revolution fanned the already combustible tensions sparked by inequality in Punjabi landholdings, as wealthier farmers could afford to capitalize on innovative technologies that promised to lift the entire region out of poverty, but which instead drove poorer farmers and their traditional techniques to ruin. In a single decade small, independent farms in the Punjab fell by 25% as landholders were forced to sell (Shiva 177). The obvious, on-the-ground scapegoats were the outsider farmers buying up land from desperate locals.

Mukherjee adroitly compares the xenophobia of the Punjab, bred by the Green Revolution, with the prejudice Jane experiences and observes in Baden, Iowa. Iowan farmers struggling to survive in the global marketplace develop anxiety about outsiders that is eerily analogous to Punjabi resentments of prosperous foreign farmers. As the locals become increasingly desperate to make their farms profitable, propaganda blaming “the international banking conspiracy” escalates, as does violence (195). At a conference, Bud is approached by a man who says “When I shoot, I don’t shoot just to maim” and who tapes a pamphlet titled “Jews Take Over Our Farmland” to Bud’s wheelchair (158). One day, while Bud is out of town for work, a stranger peddling “important information to lay on rural folk” appears at the door but leaves first when he sees Du, then again when he sees Jane. The man’s refusal to speak with either of the Asian immigrants who come to the door is suspicious enough that Du intuits that he’s there to spread racialized and xenophobic propaganda: “Did he call this place a ‘federal post’? Did he say organic law transcends man’s law? Did he talk about the international banking conspiracy?” (195).

Du, as a Vietnamese refugee, is all too aware that when times are tough, people are inclined to turn on any and all outsiders.

In the novel, Mukherjee employs the imminently empathetic character of Darrel to exemplify how prejudice and scapegoating take hold. Darrel is livid that Du has brought attention to the escalating resentments of outsiders, but he echoes similar racialized and anti-immigrant conspiracy theories as he becomes increasingly desperate to either sell or finance his farm. Darrel, frustrated that Bud is reluctant to finance a new loan for an expanded hog operation, asks Jane, “He’s in it with the big banks, isn’t he? The Eastern banks, right? They give the orders and he squeezes us, right?” (218). Darrel’s anxiety over the “Eastern” banks is multivalent: it evokes the coastal elites of the East Coast of the United States, certainly, but also the global “East.” As Darrel seizes Jane’s hands, she realizes she “can read the blown circuitry behind his eyes. Eastern bankers. Organic law. Aryan Nation Brotherhood... the tattooed man, the dusty Eldorado with the Nebraska plates” (218). Darrel’s prejudice is all the more upsetting because he loves and lusts for Jane, and even attempts to embrace her Indian culture. One night Darrel calls Jane and begs her to come over, saying he feels “crazy.” When she arrives, she’s assaulted by the scent of cumin, coriander, and turmeric: Darrel has attempted to cook a “banquet fit for an Indian princess” (216). He begs her to run away with him and open a Radio Shack in Santa Fe. Darrel’s awkward attempt to pitch woo reveals his conflicting emotions, “Hate for Bud, love for [Jane], vast pity for himself” (217). Darrel lusts for Jane’s exoticism as an escape from the dismal reality of farming in Iowa – he clearly sees bedding an “Indian princess” in the same light as franchising a Radio Shack in New Mexico – but he also views foreign forces as a pervasive threat to the only way of

life he's ever known. Burkhart notes that Darrel's escapist fantasies, and his violent reaction to realizing they will not come to fruition, are little different than those of the Khalsa Lions of Jasmine's youth:

Though militant Sikhs seek comfort in nostalgic return and Darrel imagines ways to embrace new technologies and the encroaching frontier of leisure development, both try to assuage their fears by personifying the nebulous forces of globalization, targeting bankers, and, specifically in the case of the Khalsa Lions, farmers who are less fixed in their devotion to traditional agricultural and religious practices. (15)

As Jane leaves she is terrified, expecting Darrel to shoot her in the back despite his declaration of love (218). If Darrel cannot make Jane his conquest, and therefore metaphorically conquer the foreign forces he blames for his economic and ideological predicament, Jane's experience has taught her to expect violence to follow.

In Elsa County, local anxiety over globalization is manifested by the festering resentment of people who have immigrated to the United States illegally. Gene Lutz, Darrel's father and an exemplar of traditional farming, dies while choking on Mexican food, while the serving staff, "all illegals [...] went into hiding as soon as the police were called" (8). Gene's death is representative of the general sentiment toward immigration in Baden, Iowa; foreigners are believed to be choking out the locals. One night, watching cable news, Jane and Du see a televised INS raid. As the reporter interviews a local woman about the raid, she laments: "Steve, my husband, lost his job. That was last November. We were doing so good, now we can't make the house and car payments. Are you listening Mr. President? [...] The border's like Swiss cheese and all the mice are

squirming through the holes” (27). The diatribe infuriates Jane, and she internally fumes, “What kind of crazy connection are you trying to make between Mexicans and car payments?” (27). Nevertheless, Jane’s condemnation of the flawed logic that blames immigrants for larger economic misfortunes remains unspoken. She and Du watch the segment without even discussing it amongst themselves. Their position is precarious, and they are both determined to fit into the social mores of Elsa County, which depends upon their abilities to downplay their foreignness. Du excels in school and practices perfect English, and Jane embraces her Anglicized name and role as Bud’s devoted caretaker (214, 33). Jane notes that one of the Mexicans arrested during the raid throws up, and the INS agent refuses to uncuff him to allow him to wipe his face. When Du mutters “asshole” under his breath, Jane is unsure if he is referring to the agent or the immigrant (27). Perhaps his desire to survive in American culture is so strong that he has begun to side with emissaries of an increasingly authoritarian state.

Mukherjee dramatizes the parallels between the farmers of Iowa and those of the Punjab through spectacular violence, inflicted both upon the self and others. Considering the farmers of Baden County, Jane thinks, “The farmers around here are like the farmers I grew up with. Modest people, never boastful, tactful and courtly in their way” (10-11). Despite the staid portrayal of Jane’s reminiscence, the farmers in both the Punjab and Iowa become wildly destructive throughout the text of *Jasmine*. The violence that led to both the killing of Jasmine’s husband and the attempted murder of Jane’s live-in partner is spawned by agricultural dispossession; militant Sikhs like the Khalsa Lions who are responsible for the bombing that kills Jasmine’s husband are described as “farmers’ sons,” and Bud Ripplemeyer is shot by Harlan Kroener, a farmer who can’t make his

bank payments (49, 190-2).²² The novel is also replete with accounts of self-inflicted violence, as Iowan farmers turn to suicide. A tenant farmer shoots himself after supper even though “His farm wasn’t one of the ones in trouble” (141). Jane describes how a farmer first beat his wife, “then hanged himself in his machine shed” (155). When describing the night Kroener shot Bud, Jane thinks “There’d been some suicides, but never a murder attempt” (191). Mukherjee intertwines descriptions of Iowan farmers committing suicide with meditations on the long-term effects of the Green Revolution, and the juxtaposition calls to mind Anuradha Mittal’s description of how some Indian farmers “resorted to selling their kidneys and other body parts, or committing suicide, to end the cycle of poverty” (338). In *Jasmine*, the violence spawned by impossible expectations placed on modern farmers is universal.

The farmers in the text are aligned by their worries over “weather,” “families sticking together during terrible times,” and “arranging decent weddings for their children,” but also by their enslavement to unpredictable external forces (45). Early in the novel Jane proclaims that “A farmer is dependent on too many things outside his control,” a sentiment that is made manifest as the reader, if not the characters, becomes aware of the vast transnational power structures that wreak havoc on local agricultural communities (11). As Eric Schlosser notes in *Fast Food Nation*, in the 1980s, as the corporate-friendly Presidential administrations of Ronald Reagan and George H. W. Bush held power in the United States, “large multinationals—such as Cargill, ConAgra, and IBP—were allowed to dominate one commodity market after another” (8). Independent

²² In *The Violence of the Green Revolution*, Shiva’s analysis of the rise of Sikh violence can help us parse the fictional violence of the novel. Shiva notes that “the revival of the cultural identity of the Sikhs was more in response to the erosion of regional autonomy and the cultural and moral erosion of life in Punjab by the commercial culture of the Green Revolution. It was not a cultural conflict of Sikhs with people of the Hindu religion” (187).

family farmers were replaced with corporate farmers who absorbed their properties and occasionally kept them on as employees.

While the novel is interested in the causes of the global agricultural crisis, it is even more preoccupied with the rhetorical techniques that have kept those causes from becoming widely known. The public outcry in response to the agricultural crisis was a political problem, and one that was deliberately handled through a campaign of propaganda. Writing about *Jasmine* in “Familiar Terrain: Domestic Ideology and Farm Policy in Three Women’s Novels About the 1980s,” Amy Levin notes that extra-textual political personages like Agriculture Secretary John Block and David Stockman led a campaign that “presented farmers as irresponsible financial managers who failed to provide for their families and thus undercut the stability of the nation” (23). Although political machinations and legislation made financial success more difficult for small farmers, propaganda sought to link the success of small farms to the farmers’ character, thereby discrediting their protests and pleas for assistance.

Similarly, the Green Revolution was spearheaded by U.S. foreign aid agencies and many of the same Western agribusinesses that later dispossessed family farmers in America’s heartland. As Mittal contends, international powers convinced Indian farmers that expensive technological fixes could alleviate national hunger even while transnational organizations like the International Monetary Fund cut the programs that might have allowed those living in poverty to afford to adopt them (338). Burkhart emphasizes that Jase encounters some of the players in international agricultural manipulation both in India, as a child of the Punjab, and in America, where she tutors a Ford Foundation representative and is an acquaintance of a World Bank consultant. He

writes, “Although the World Bank’s reputation as a globalizing force needs little explanation, it’s notable that the Ford Foundation was one of the earliest financiers of the Green Revolution as it cleared the path for infamous multinationals such as Dow, Monsanto, and Union Carbide, whose neocolonial efforts funded the export of agricultural engineering products as well as the rudimentary publicity and education campaigns to convince ‘developing’ farmers to experiment with them” (13). As farmers foundered globally, the farmers losing their livelihoods struggled to understand the causes of their hardships, in part because literature sponsored by organizations like the Ford Foundation aggressively obfuscated some of the most influential factors. In 1959, for example, The Ford Foundation created a report that became the foundation of India’s Intensive Agricultural Development Programme (IADP), which was to become the foundation of the Green Revolution (Shiva 34). As Shiva writes, “Under the Ford Foundation programme, agriculture was transformed from one that is based on internal inputs that are easily available at no costs, to one that is dependent on external inputs for which credits became necessary” (35-6). The “miracle” outputs of the Green Revolution depended upon abundant resources, including water, chemical fertilizers, pesticides, energy, and genetically modified seeds. The marketing of the Green Revolution as a universal cure-all disadvantaged small farmers working in resource-strapped regions, even as American advisors repeatedly heralded the program as an unmitigated success (Shiva 45).

Interpretations of the novel’s agricultural considerations often fixate on *Jasmine*’s conclusion, which shows Jane on the beginning of a new incarnation, leaving behind the farmers of Iowa to form a family with Taylor and his daughter, and possibly Du, in

California. Levin writes that *Jasmine* reifies the myth of an “American Dream,” arguing that Jasmine:

has familiarized herself with a 1980s ideology that lays claim to classlessness but looks down on farmers, that values technology and money over the vagaries of crops, livestock, and the weather [...] The novel seemingly liberates Jasmine, but fails to challenge a system that traps and oppresses many Midwesterners. (39-40)

Debjani Banerjee also condemns the novel as failing to reveal the “complex workings of postcolonial and neocolonial forces” that underpin the violence and migrations that drive the novel’s plot (162). Burkhart is more generous in his interpretation, suggesting that Mukherjee is aware “of the social costs of programs such as the Green Revolution,” but that she has Jasmine embrace a classically American, Western individualist ideology instead of grappling with “larger-scale issues” to reveal the ways in which “gender and ethnicity limit the protagonist’s agency” to do so (12, 19). In contrast, I contend that *Jasmine* is a calculated consideration of the transnational forces that impact farm workers worldwide and an astute analysis of the difficulties inherent in disrupting those forces at the individual level. Whereas Banerjee laments that the characters in the Punjab cannot see the human interference that exacerbates the effects of the drought, I interpret such lacunae as part of a phenomenological immersion that allows the reader to empathize with the mindset of a farmer in such circumstances (Banerjee 162). Not unlike contemporary farmers, who are regularly exposed to literature that argues that climate change is a naturally occurring event, Punjabi farmers in the 60s and 70s were told repeatedly that the Green Revolution could only improve their crop yields. The average

farmer in the Punjab would not have been aware of the ways in which the ‘miracle’ seeds of the Green Revolution were less drought resistant than traditional varieties, or how biocides, chemical fertilizers, and monocultural crops could erode soil constitution, contributing to destitution in times of drought (Shiva 119-121). Similarly, Burkhart’s assertion that Jasmine cannot fight the larger forces that drive the violence that surrounds her because of her ethnicity and gender overlooks the reality that no character in the text is capable of such disruption. Darrel, after all, is a white, male, land-owning native Iowan son, and yet he cannot disrupt multinational agribusiness, either. Both Darrel and Jane escape the pressures of modern farming without speaking truth to power: Darrel escapes via suicide, and Jane via elopement. In India, Jyoti’s brothers are in the same predicament: they sell their father’s farm, unable to make the system work for them, despite being male landowners in a patriarchal society. Certainly Jasmine moves through the world in a way that is linked to her sex, gender, and ethnicity, but the novel is careful to show how challenging it is for any one individual to disrupt immense, de-centralized power structures.

Through all of her incarnations, Jyoti/Jasmine/Kali/Jazzy/Jase/Jane is a farmer’s daughter, and she is subject to the influences of international agribusiness despite her best attempts to escape her history. Jyoti is raised on a farm that fails during the Green Revolution, loses her husband to violence driven by collapsing farms, and, when she finds contentment in New York, that, too is disrupted by seeing the “farmer’s son” who murdered her husband. She flees to another agrarian society in Iowa, only to discover it is subject to the same violence that has driven her hitherto. As the novel concludes and Jane prepares to leave for California, there is no indication that this new incarnation will be

her last: the end of the novel does not reveal a woman who is settled and “liberated,” as Levin contends, but a character who is driven to perpetual migration. Jasmine’s trajectory offers insight into the plight of Punjabi and Iowan farmers, the vast network of influences that impact global food production, and the seeming inescapability of corporate and governmental interference. Jasmine can be seen as representative of the green revolution itself, in that she believes she has a choice – that she can choose to take the American Dream – but her choice is delimited by global patriarchal structures she is only free to operate within. As Kristin Carter-Sanborn notes, there is little agency in Jasmine’s transformations: Jasmine is remade repeatedly “in the images of dreams,” but the dreams seem to belong to the men who surround her (3). Darrel, too, superficially has a choice – he can choose to sell his farm to a developer to turn it into a golf course, or he can continue to work with the equipment he has at his disposal – but that choice is moot within the rigid conventions of Elsa County.

Jasmine received immense international attention and glowing reviews, which Mukherjee viewed as both a blessing and a curse. As Carter-Sanborn records, *Jasmine* “was received with acclaim in nearly every major review publication and has been increasingly taught since then in women's studies, ethnic studies, and contemporary American literature courses” (1). In a 1998 interview, Mukherjee noted that although literary scholars wrote about her novels extensively, critics were too inclined to read her literature from a purely political and Marxist perspective, or to discredit books published by mainstream commercial presses as evidence that the author had “sold out” for a popular audience, and she lamented that “the reasons for looking at work become non-literary” (Desai, Barnstone, and B. Mukherjee 137). Nevertheless, in the same interview

Mukherjee also stated that “all good writing comes from obsessive passion and ambition to change the world,” and that “all fiction, all speech, all act, in real life or fiction, is political” (147, 137). Mukherjee’s comments make it clear that she is entirely cognizant of the elements that make a novel a powerful political tool: they must have wide commercial reach, even if that wide commercial reach invites scorn from the literary intelligentsia, and they must be artistically engaging so that their political message is digestible. Near the interview’s conclusion, Mukherjee states:

I want to make it absolutely clear that I don't envision my characters as mouthpieces and I don't want them to be mouthpieces for anyone but themselves. Once you, as a writer, lose the eccentricity of character portrayal, then you're merely writing texts to be taught in college classrooms. That's a real, real danger to art. But I hope that my books make people think. (145)

By ensuring that her characters are unique individuals, in stark contrast to the ideological avatars of *Shadow from Ladakh*, Mukherjee has crafted a novel that effectively makes the consequences of the industrialization of agriculture feel urgent, engaging, and devastating.

Although I find myself quite compelled by *Jasmine*’s indictment of the Green Revolution and the myth of sustainable agricultural development, myriad critics took issue with what they interpreted as an Americanized author offering up a commodified and perhaps even Orientalized version of a colonized culture.²³ John K. Hoppe, along with critics like Banerjee, Anindyo Roy, Alpana Sharma Knippling, and Gurleen Grewal,

²³ Anindyo Roy, for example, wrote that Mukherjee’s novels “elide the deep contradictions built within the space of postcoloniality... [her aesthetic] forms are clearly indicative of the stabilization and commodification of a colonized culture by a postcolonial writer whose own authorial gaze corresponds to that of the Orientalizing West” (128-29).

critique “Mukherjee’s mis-representations of the real circumstances of post-colonial subjects within cultural, economic, literary and ideological relationships between ‘First’ and ‘Third’ worlds” (Hoppe 154-5). Hoppe attempts to complicate such critiques with a fuller assessment of the aesthetics of technology in *Jasmine*, only to misinterpret the relationship of farming and technology within the text. Hoppe argues that the farmers in the text are symbolic of the dangers of tradition, and indicative of the risks of rejecting technological advancements. He writes:

[The Khalsa Lions] bear immediate comparison to Darrel and to Jasmine’s own father, the bitterly dispossessed farmer; as Jasmine says, farmers are the same everywhere, and Mukherjee’s identification and equivalence of them begins to write the futile devotion to the past and its already-ossified materials in physical/geographical terms. The farm is the site of the past, the unhealthy space of repetition and stasis. (152)

Hoppe’s critique ignores that much of Darrel’s debt, and therefore his desperation, comes from adopting technology too fast. Darrel uses his father’s luxurious new double-wide, air-conditioned tractor, is building a state-of-the-art hog pen, and when he realizes he can’t come up with the money to keep up with the latest technological advances, he conceives of a plan to sell it all and become a purveyor of the latest technology in a Radio Shack (8, 217). That such a misinterpretation is possible is indicative of how effectively the technological interventions that drove the Green Revolution have been occluded, and perhaps that Mukherjee’s critique is too subtle to effectively raise awareness of the human and environmental consequences of agricultural development in the mainstream reading public. Mukherjee’s trenchant condemnation of an agricultural model that

depends upon constant technological improvements demands a level of audience awareness of the historical conditions that have disenfranchised small farmers the world over. That so many critics have overlooked that history suggests that this novel might be a more effective ideological tool with additional historical contextualization. If *Shadow from Ladakh* is too overtly didactic, then perhaps *Jasmine* is too discrete.

In Aravind Adiga's *The White Tiger* we may find a happy medium. In many ways, *The White Tiger* is the perfect follow-up to *Shadow from Ladakh*, fixated as it is on industrial development in India, its impacts on the body and soul, and filtered through the lens of Sino-Indian relations. The titular character of the novel, who also goes by the names Munna, Balram Halwai, Country Mouse, and Ashok Sharma, declares himself a great Indian entrepreneur.²⁴ Having heard that the then-Premier of China, Wen Jiabao, is interested in sparking the entrepreneurial spirit in China, The White Tiger sets out to explain his transformation from an impoverished villager to a successful self-starter through a series of letters written over the course of seven nights. At the beginning of *Shadow from Ladakh*, the Chinese delegate to the World Peace Congress insists that the conflict will be resolved once the people of India realize that China is "determined to set you free from the iron chains of imperialism. We will give you real freedom. We will help you overthrow your slave government, crush your bourgeoisie, set up the rule of the people... *Hindi-Cheeni bhai bhai!* Indians and Chinese are brothers!" (10). Forty-two years later, *The White Tiger* invokes the same 1950s propaganda – the slogan began as a government attempt to incubate filial sentiments between the two nations – with a more sardonic tone (Adiga 272). The ceaseless drive for industrialization, development, and

²⁴ The main character of *The White Tiger* mainly speaks as either The White Tiger or as Balram. As these two incarnations are markedly different in their philosophies, I will refer to this character by the specific name that best represents him at that point in the text.

Capitalist dominance, even at the cost of widespread ecological devastation and human displacement, has made strange bedfellows out of the on-again, off-again enemy nations.

Adiga's novel is also the progeny of *Jasmine: The White Tiger* indicates that in the aftermath of the Green Revolution, the agrarian poor either endure its environmental consequences or migrate to seek their fortunes in urban centers.²⁵ The White Tiger describes his childhood in "the Darkness" – the fecund, pastoral Indian countryside replete with "rice fields and wheat fields and ponds in the middle of those fields choked with lotuses and water lilies, and water buffaloes wading through the ponds" – but the pristine imaginary of the landscape is revealed to be little more than a fantasy (11-12). Our narrator fixates on water – the inability of the poor to access clean water or sanitary methods of sewage disposal – to showcase the rampant pollution that impacts nearly every aspect of regional life. The White Tiger warns the Chinese Premier "not to dip in the Ganga, unless you want your mouth full of feces, straw, soggy parts of human bodies, buffalo carrion, and seven different kinds of industrial acids" (12). He reinforces his claim as he recounts the excruciating hours before his father's death: as Balram and his brother cross the river with their ailing father, they attempt to wash his mouth with the water, only to discover it is so polluted that it forces him to "spit more blood" (39). The village is replete with defunct electricity poles, broken water taps, raw sewage, and local children who are "too lean and short for their age, and with oversized heads from which vivid eyes shine, like the guilty conscience of the government of India" (16). In his letters, The White Tiger repeatedly lauds the Chinese sewer system, noting that waste

²⁵ In "Double Vision in Aravind Adiga's *The White Tiger*," P. Suneetha contends that Adiga is "the first novelist" to effectively depict the plight of both the urban and rural poor in India, and while this is almost certainly hyperbolic, it is also representative of the types of accolades that continue to shower down upon *The White Tiger* (164).

disposal and access to clean, potable water is perhaps the greatest problem facing the residents of the Darkness. He notes that although India is ostensibly a democracy, the people who live in the Darkness are also destined to live at the mercy of corrupt and cosmopolitan landlords, despots, and bosses (11-12). If the poor are not even entitled to their votes, they would be better off foregoing “democracy” in favor of environmental welfare. He writes: “If *I* were making a country, I’d get the sewage pipes first, then the democracy, then I’d go about giving pamphlets and statues of Gandhi to other people” (80). If *Jasmine* depicts a generation of farmers desperate to preserve their traditions, nearly 20 years later *The White Tiger* showcases how corrupt developers, government officials, and industrialists have disrupted traditional agrarian values and invited a host of environmental evils.

Balam follows the same trajectory of so many of his rural compatriots, leaving his small village of Laxmangarh in Bihar for the modest metropolis of Dhanbad in pursuit of employment. He lands a job as a chauffeur for the son of one of the greedy landlords that held his ancestral village in his iron grip, and ultimately moves with the family to a wealthy suburb of Delhi. His new master, Ashok, has been educated in America, and returned with Western ideals and an American wife of Indian origin, Pinky. Balam claims to be ecstatic with his newfound position and urban lifestyle, but his assessment of the city details the human and environmental costs of the opulence of the wealthier residents. *The White Tiger* suggests that the Indian poor face even greater environmental marginalization when driven to urban environs than in the Darkness.

As a servant, Balam is initially struck by the ways in which the poor are victimized by polluted air in the city, while the rich are able to avoid it almost

completely. Describing rush hour, Balram notes that nearly every motorbike, scooter, or bicycle driver wears glasses and a face mask in order to avoid the acrid air. In contrast, the wealthy hide behind tinted glass, breathing air that has been cooled and filtered. He notes:

There was a good reason for the face masks; they say the air is so bad in Delhi that it takes ten years out of a man's life. Of course, those in the cars don't have to breathe the outside air—it is just nice, cool, clean, air-conditioned air for us. With their tinted windows up, the cars of the rich go like dark eggs down the roads of Delhi. Every now and then an egg will crack open—a woman's hand, dazzling with gold bangles, stretches out an open window, flings an empty mineral water bottle onto the road—and then the window goes up, and the egg is resealed. (112)

The wealthy only expose themselves to the streets of the city to add to the contamination, then withdraw, avoiding the consequences of their environmental disregard.

As most of Balram's time is spent driving, he spends much of the text preoccupied with the injustice of the toxicity of the urban air. Balram is told that he should never run the air conditioning while driving alone in the car, thus clarifying that rarified air is the exclusive purview of the wealthy (119). Similarly, armed guards bar the poor from entering the air conditioned mall (129). Ashok is so shielded from the pollution to which he and his brethren have condemned the poor that he seems legitimately unaware of its impact on the body. One day Ashok is disgusted by the people spitting in the traffic around their car, prompting Balram's internalized retort, "*Well, if you were out there breathing that acid air, you'd be spitting like him too*" (116). In contrast, Balram is horrified that even an animal should be forced to survive on the streets

of Delhi. One day Balram witnesses a water buffalo, loaded down with empty car engine oil cans, only to think, “poor water buffalo! To carry all that load—while sucking in this air!” (115). While most of the pollution is clearly attributed to the wealthy, Adiga also notes that some of the toxicity is the result of the displaced poor, desperately burning commercial waste in order to survive in the alien urban landscape. Balram recounts that the homeless and servants forced outside in the winter “burn whatever they find on the ground. One of the best things to put in the fire is cellophane, the kind used to wrap fruits, vegetables, and business books in: inside the flame, it changes its nature and melts into a clear fuel. The only problem is that while burning, it gives off a white smoke that makes your stomach churn” (133). In the hostile metropolis the people are forced to contribute to the pollution that oppresses them to survive.

The pollution in *The White Tiger* takes its toll on the physical wellbeing of the poor, but is also shown to be a corrupting force on the character of the wealthy. Pinky, who is particularly unused to the environs of Delhi, is unmoored by traffic in the Indian city. Balram recounts that “The traffic grew worse by the day. There seemed to be more cars every evening. As the jams grew worse, so did Pinky madam’s temper” (130). Although traffic may infuriate the average person, Pinky’s increasing ire is likened to madness. One night Pinky, pining for America, drunkenly takes the wheel from Balram only to hit and kill a young child. Balram’s master and his family force Balram to sign an affidavit that he was the one driving, and therefore he would go to jail, should the police learn of the accident. The incident is never reported and Balram is not arrested, but his opinion of his boss, previously depicted as a kind-hearted ally, is predictably tarnished. As Balram becomes increasingly corrupt, ultimately murdering Ashok, stealing a bag of

bribe money he was in the process of delivering, and assuming his victim's name to begin a new life in Bangalore, he describes his corruption in vehicular terminology. Ashok "returned from America an innocent man, but life in Delhi corrupted him—and once the master of the Honda City becomes corrupted, how can the driver stay innocent?" (167). Balram, Ashok, and Pinky all find their morality systematically decimated in the toxic streets of a Delhi choked with cars and their smog.

Ashok's family business, which involves illegally mining coal from government mines for free and avoiding all subsequent taxation, also contributes to the ambient pollution that pervades the novel. Ashok notes with pleasure that the media does not focus on the coal industry, leaving him free to profit without scrutiny: "Coal trading, these days. People think it's only technology that's booming. But coal—the media pays no attention to coal, does it? The Chinese are consuming coal like crazy and the price is going up everywhere. Millionaires are being made, left, right, and center" (182). While their environmentally despicable dealings may not invoke the ire of the local public, however, Ashok and Balram still pay a price for affiliating themselves with a dirty business. Writing as *The White Tiger*, the narrator describes his past self as spongelike, absorbing "the chatter of coal" alongside "the aroma of whiskey from the glasses, the stench of sweat rising up from the Stork's feet dipped in the warm water, the flakiness of his skin, and the light jabs of the sandaled feet of Mr. Ashok or the Mongoose when they bumped into my back in the process of moving about. I absorbed everything" (60). Despite never being exposed to the coal in the mines or polluted air, the people affiliated with coal are spiritually polluted by the product they peddle. Adiga's visceral meditation on Delhi's polluted air, the industries that drive that pollution, and their effects on the

body, is reminiscent of Stacy Alaimo's analysis of the "interconnections, interchanges, and transits between human bodies and nonhuman natures" in her seminal text, *Bodily Natures: Science, Environment, and the Material Self* (2). Alaimo makes a potent case that human corporeality is in fact trans-corporeality, "in which the human is always intermeshed with the more-than-human world" (2). The human bodies of *The White Tiger* are inseparable from the non-human environment that they have corrupted.

Adiga's project is made more potent because it interrogates the principle that the rich can avoid the consequences of the physical contamination their developments have caused. As Alaimo notes, the companies that produce and disseminate toxic products (or, more likely, toxic by-products), are also invested in cultivating the myth of an "enclosed modern body" or at the very least uncertainty that the body is susceptible to environmental hazards (91). Such mythos can only persist, however, as long as the myth-makers are able to avoid facing their wake of destruction; were they to be exposed to their pollution, they would be forced to concede its risks. *The White Tiger* cultivates dread by suggesting that even if the upper classes can avoid the slow violence of chemical contamination or lung disease, suffering, contaminated bodies can still be capable of enacting spectacular violence in retribution. *The White Tiger* repeatedly emphasizes the differences between the bodies of the rich and the poor. In one stark example, he describes his father's body in direct contrast to that of a rich man:

A rich man's body is like a premium cotton pillow, white and soft and blank.

Ours are different. My father's spine was a knotted rope, the kind that women use in villages to pull water from wells; the clavicle curved around his neck in high relief, like a dog's collar; cuts and nicks and scars, like little whip marks in his

flesh, ran down his chest and waist, reaching down below his hip bones into his buttocks. The story of a poor man's life is written on his body, in a sharp pen. (22)

But the bodies of the rich only appear to be sacrosanct. When Balram murders Ashok, he rubs his hands over his clavicles to find the right spot to puncture his throat, only to be reminded of his father's tortured body (245). Ashok's stunned body in the street makes a sound "like wind escaping from a tire," before he is left on the side of the road like so much litter (245). Balram murders Ashok because his character has become polluted in the acrid air of Delhi, and in death, Ashok becomes little more than roadside detritus.

By the novel's conclusion, The White Tiger is grateful for the pollution in Delhi, because it has enabled his ascension from a poor servant to a wealthy entrepreneur. On the day Balram sets out to murder Ashok, thus inciting his transformation into The White Tiger, he feels empowered by the shroud of pollution. He thinks:

The city knew my secret. One morning, the President's House was covered in smog and blotted out from the road; it seemed as though there were no government in Delhi that day. And the dense pollution that was hiding the prime minister and all his ministers and bureaucrats said to me: *They won't see a thing you do. I'll make sure of that.* (209)

Under the veil of smog, servants like Balram have the potential to supplant their nominal masters. If the masters are not yet worried about the bodily costs of their excess, Adiga seeks to foster dread that under the cover of adulterated air, the impoverished with nothing left to lose will come for them.

The White Tiger comforts his audience with the thin assurance that government propaganda is working to keep the poor from rising up against developers and

industrialists. Describing the popularity of *Murder Weekly*, a magazine published by the government of India and sold so cheaply that even the poor can afford it, he argues that the murderer is always so repugnant that no reader would ever seek to imitate him (105). The implied corollary is that literature has the power to upend the status quo. While visiting a book market, *The White Tiger* suggests that when poor men read the words of wise men written in books, they “spill out secrets that allow the poorest man on earth to conclude the ten-thousand-year-old brain-war on terms favorable to himself” (217). In an interview with Stuart Jeffries shortly after winning the prestigious Man Booker Prize, Adiga himself suggests similar things about the potency of narrative. Questioned about the motives behind showcasing a darker side of India, Adiga retorts:

At a time when India is going through great changes and, with China, is likely to inherit the world from the west, it is important that writers like me try to highlight the brutal injustices of society. That's what writers like Flaubert, Balzac and Dickens did in the 19th century and, as a result, England and France are better societies. That's what I'm trying to do - it's not an attack on the country, it's about the greater process of self-examination. (Jeffries)

The White Tiger and Adiga both believe that extra-textual reform can source from trenchant literary critique.

Recent research supports Adiga's supposition that if corporate and government propaganda operates as a prophylactic against the populace demanding more stringent environmental action and protections, literature might begin to neutralize its effects. Resource extraction and therefore development depends upon distant actors – or people divorced from a region – to be complicit in its degradation. By inspiring readers to

become more invested in place, novels that invoke and explicate vulnerable ecosystems might make readers better able to critique environmentally destructive practices and narratives in the region. In Richard Maxwell and Toby Miller's research on breaking through the propaganda of climate change denial, they note that "the majority of people responding favorably to climate science and pro-environmental messages are Latin@ and Black," and attribute that response to the unfortunate fact that communities of color in the United States are disproportionately vulnerable to environmental harms, and therefore experience them firsthand (290). They also note that the evidence suggests that "people who do not regard themselves as directly affected tend to embrace environmental values when stimulated to think beyond their own lives and engage the cross-generational impact of climate change in order to consider the lives of those yet to be" (291). In other words, to break through the propaganda, pro-environmental activists must find a way to communicate that makes people feel connected to place, proximate to environmental harm, and cognizant of the future.

While novels like *Shadow from Ladakh*, *Jasmine*, and *The White Tiger* are potent tools to help readers experience a specific locale and its environmental vulnerabilities, it also seems possible that new digital tools, the likes of which were unavailable for the publication of the earlier novels, might help both to strengthen the phenomenological impact of the texts and to contest some of the more virulent pro-development propaganda. *Ladakh*, for example, doesn't expressly reference sustainable development as such – that term didn't become popularized until nearly twenty years after the novel's publication – but steel mills operating in India have since begun using it explicitly. By creating an interactive digital StoryMap, shown in figure one, it is possible to juxtapose

the propaganda of the novel and contemporary steel mills to news stories and environmental studies that reveal a dramatically different set of truths.

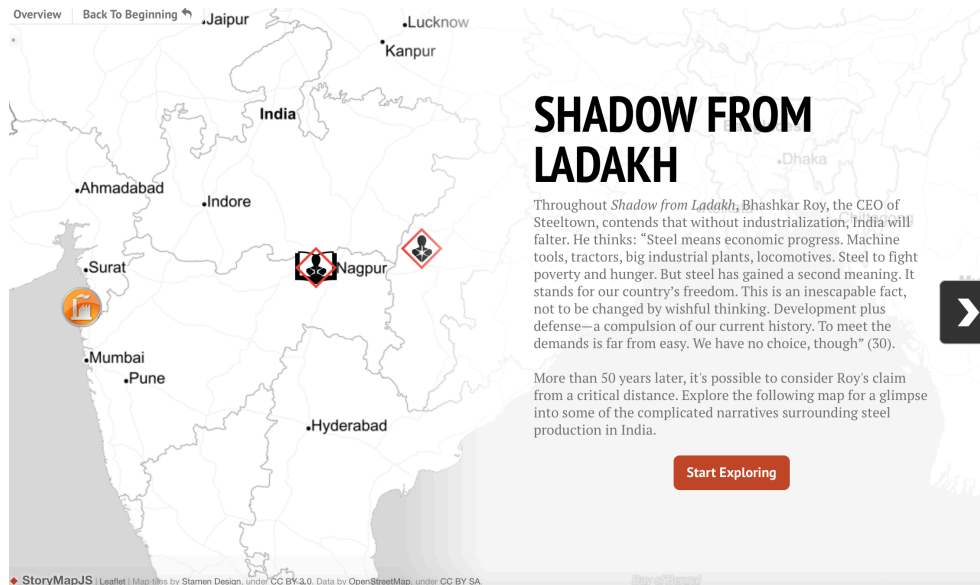


Fig. 1: A visualization of extra-textual environmental repercussions of the steel industry paired with textual events from *Shadow from Ladakh*. See in full at <http://www.rachelrochester.com/new-index/>

Storymaps, which have long been a staple of the Digital and Geo- Humanities, range from simple, PowerPoint style presentations to more interactive, Google Earth style “tours.” Programs like Northwestern University’s StoryMapJS, for example, help users overlay stories onto maps in a way that is customizable and intuitive. The simple platform allows creators to drop a pin anywhere in the world. Creators can then add their own text, along with links, videos, tweets, sound files, or images, to the pin. To make it even easier, StoryMapJS automatically adds icons to each pin that show users what they can expect when they click. Slightly more complicated, but infinitely more experiential,

users can create “tours” with programs like Google Earth Pro that can be shared via a downloadable KMZ or KML file.

For *Shadow from Ladakh*, I have created both a two-dimensional and a three-dimensional StoryMap, the latter of which can be seen in figure two.

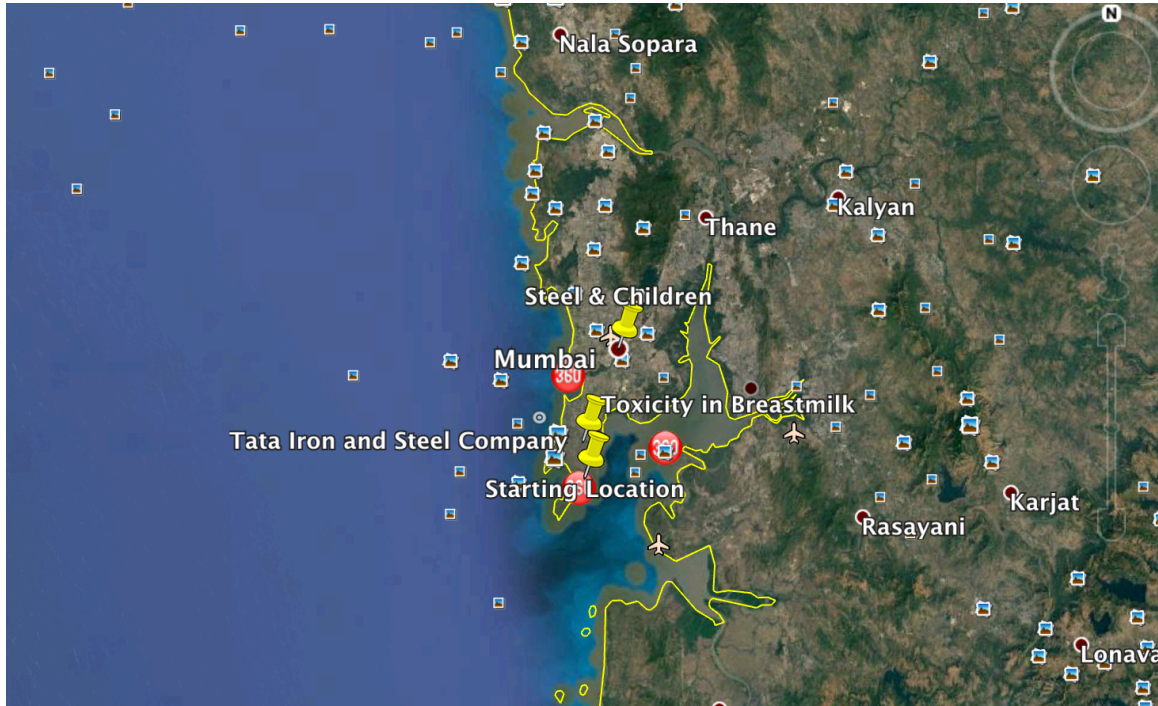


Fig. 2: A screenshot of an annotated immersive satellite tour of *Shadow from Ladakh*. See in full at <http://www.rachelrochester.com/new-index/>

Both maps are intended to help readers feel connected to the world of the novel, but also to emphasize the disjuncture between the narrative put forth by pro-industrialists and that experienced by the people who live near industrial sites. Users can read the articles I’ve selected, but they can also edit the KMZ file they’ve downloaded, add more data points, and explore the photos and stories that have been added to the map by users the world over. StoryMaps such as these could be used both within and beyond the classroom to

help students, scholars, and interested parties visualize the extratextual consequences of the environmental costs of “sustainable development.”

Shadow from Ladakh, *Jasmine*, and *The White Tiger*, are important not simply because they reflect and shape public sentiment surrounding so-called sustainable development, and the human costs of globalization and industrialization, but because they help showcase the evolution of those sentiments through time. By employing digital tools, it is further possible to showcase myriad postural differences regarding development in a centralized, easily accessible forum. Digital tools like StoryMaps might work in concert with environmentally oriented postcolonial novels to challenge the propaganda that proliferates about so-called “sustainable development.” Maps like these have the potential to add a plethora of voices from reporters, activists, and actors who are on-the-ground in vulnerable regions, and may even be capable of bringing attention to impending action items in real-time.²⁶

²⁶ It is important to consider the political implications of digital tools in the postcolonial context. The Digital Humanities have notorious lacunae when it comes to postcolonial communities, including marginalizing mediation of postcolonial digital archives. As Martha Nell Smith notes in her recent consideration of postcolonial archives, even though digital tools offer the opportunity to allow users access to a greater body of information and could authorize them to curate that information independently, most archives insist on authoritative curation, which reifies traditional power dynamics (406). I mediate these maps quite heavily, and the available digital tools have so far frustrated my attempts to create fully inclusive and egalitarian interactive StoryMaps. I take some comfort from knowing that other users can edit and recirculate the Google Maps KMZ and KML files, and that platform also showcases photographs and travel tips added by users the world over. Ideally, I would like to create a program to operate with Google Earth that would allow multiple users to contribute to the same tour simultaneously, though that demands technical expertise and funding that has yet to be secured.

CHAPTER III

THE ACTIVIST AUTHOR: PARATEXTS AND THE NOVEL IN THE ANTHROPOCENE

Considering the burgeoning field of postcolonial ecocriticism in 2004, Graham Huggan noted that the movement was primarily focused on the aftermath wrought by predominately white settler cultures (703). He expressed concern that the great bulk of Western postcolonial ecocriticism neglected to account for the environmental implications of actions and ideologies of the neo-colonialist imperatives of the post-independence Indian State (704). For Huggan, one solution was to consider contributions from non-Western environmental scholars and activists. He concluded that the union of postcolonial theory and environmental concern might be expected to produce six distinct fields, the first being explicitly activist critiques of capitalist ideologies of development, and the second being text-based treatments of traditional discourses in environmental representation. Huggan notes: “Both fields [one and two] combine a political concern for the abuses of authority with an ethical commitment to improving the conditions of the oppressed” (720). In this chapter, I would like to consider the steps contemporary authors of postcolonial cli-fi might take to combine these two proposed fields and to what effect. Amitav Ghosh and Indra Sinha have advanced explicitly activist agendas that express concern both for the welfare of marginalized peoples living in postcolonial states and for regional environmental integrity. However, it is my contention that both authors have supplemented their literary diatribes against human and nonhuman exploitation with carefully constructed authorial personae, designed to showcase additional ways for readers to contend with the issues brought to light by their novels. The literary texts – in

this case *The Hungry Tide* and *Animal's People* – can scarcely be separated from the body of work that is the authors' real-world activism.

Climate Fiction, colloquially known by the portmanteau “cli-fi,” is an explosive new genre of literature focused on humanity's impact on the environment.²⁷ Much of the focus of cli-fi has been on its willingness to grapple with climate change head-on.

Writing in 2013, cli-fi novelist and champion Margaret Atwood wrote:

There's a new term, cli-fi (for climate fiction, a play on sci-fi), that's being used to describe books in which an altered climate is part of the plot. Dystopic novels used to concentrate only on hideous political regimes, as in George Orwell's *Nineteen Eighty-Four*. Now, however, they're more likely to take place in a challenging landscape that no longer resembles the hospitable planet we've taken for granted.

While much cli-fi focuses on the causes and consequences of climate change, however, some definitions expand the scope of cli-fi to consider other forms of environmental degradation. In a 2015 article for *The Atlantic*, J. K. Ullrich suggests that pivotal themes include “examining the impact of pollution, rising sea levels, and global warming on human civilization.” This expanded definition allows us to incorporate novels that seek to elucidate the flawed ideology that underpins humanity's willingness to defile the earth to the point of systemic, planetary instability. Postcolonial cli-fi, in particular, scrutinizes the similarly exploitative methodology that has driven colonialism and environmental degradation around the world.

²⁷ By most accounts, the term “cli-fi” was coined in 2007 by Dan Bloom. It was rapidly adopted and popularized by novelist Margaret Atwood, who tweeted about the term in 2011, bringing it into more widespread usage (Quinion).

My consideration of Ghosh and Sinha's cli-fi novels alongside their real-world activism begins, necessarily, with an attempt to recuperate the much-maligned figure of the author, and Gérard Genette's theory of paratextuality. Genette contends that the paratexts of a literary work are the "means by which a text makes a book of itself and proposes itself as such to its readers, and more generally to the public" (261). Although what constitutes a paratext varies, and Genette refers to paratexts as a "community of interest" rather than a selection of possible materials that could be categorized and listed, he emphasizes that they can include verbal and non-verbal materials such as frontmatter, illustrations, the book's title, and the author's very name. Expanding on this definition, it stands to reason that the author's identity, and what the readers know of that identity, inevitably influences their reception of the text of the book itself.

In *Postcolonial Writers in the Global Literary Marketplace*, Sarah Brouillette builds upon Genette's theory of paratextuality to specifically consider postcolonial authorship. Brouillette notes that postcolonial literature in particular, which is a niche in a struggling publishing industry, cannot be separated from its role as a commodity. This commodity status inevitably influences authorial identity:

...the current market positioning of postcolonial writing is an aspect of – and a contributing factor in – a shift away from any sense of the writer as a being with resolute autonomy from the commercial sphere. The postcolonial author has emerged as a profoundly complicit and compromised figure whose authority rests, however uncomfortably, in the nature of his connection to the specificity of a given political location. ... writers' anxiety tends to stem from the dissemination of their texts to reading communities accessing privileged metropolitan markets

that are often (though not exclusively) Anglo-American in location and orientation. Writers are compelled to resist, justify, or celebrate precisely this aspect of the postcolonial field's arrangement, in accordance with their own circumstances. (3-4)

In other words, the publishing industry is not apolitical, and postcolonial authors, who are often producing texts that critique neocolonialism, must undertake some rhetorical acrobatics to rationalize their participation in an arguably neocolonial system of global commodity exchange.

These mental gymnastics become even more complex for environmentally concerned authors, who must also contend with the material consequences of the publishing industry, even while expressing concern for environmental degradation and climate change. The 2008 report *Environmental Trends and Climate Impacts: Findings from the U.S. Book Industry* sought to determine the environmental impact of U.S. publishing as a whole, and is perhaps the most important study yet conducted on the topic. The report, commissioned by the Book Industry Study Group and the Green Press Initiative, considered “energy use by all participants of the book industry in all segments, environmental policy development, transportation of books, resource consumption, the certification and conservation of forests, and the production, disposal, and recycling of paper” (1). The report's findings are grim, indicating that through all steps of production, the industry emits 12.4 million metric tons of carbon, or a net 8.85 pounds per book. While this is but a small fraction of the total U.S. greenhouse gas emissions, which amounted to an estimated 6,587 million metric tons of CO₂ equivalent in 2015, it nevertheless represents a significant source of deforestation and transportation emissions

(“Sources of Greenhouse Gas Emissions”). The environmental implications of the industry extend beyond carbon emissions to habitat destruction and environmental degradation. As the Green Press Initiative notes, the demand for paper encourages entrepreneurs to convert natural and old-growth forests into single-species tree plantations, with dire consequences to ecosystemic welfare. While the report doesn’t consider paperless publishing alternatives like E-books and audiobooks, those methods of publication aren’t absolved of environmental guilt either. While most manufacturers of E-readers have not published environmental reports for their devices and therefore some of the environmental ramifications of E-books are opaque, the manufacturing costs of such devices, energy expended during the “use” stage of their lifecycles, energy use of the modems, servers, and infrastructure necessary to deliver E-books, and the environmental costs of E-waste at the end of the devices’ lifecycles suggest that there are severe environmental implications for publishing in any form. Authors of books that grapple with environmental issues must also construct their identities around their complicity in an industry that contributes to the very environmental devastation they seek to curb and critique.

Postcolonial and environmentally focused authors must rationalize the material implications of intellectual pursuits that critique global, capitalist modes of materiality, but they are also expected to deliberately and carefully construct myriad other facets of authorial identity. In the modern era, in which readers have access to a wealth of digital information about virtually every author, authorial construction is particularly detailed. For Genette, the public personae of authors has always influenced the way readers

receive their works, and never more so than in the modern era. Genette acknowledges that:

The ways and means of the paratext are modified unceasingly according to periods, cultures, genres, authors, works, editions of the same work, with sometimes considerable differences of pressure: it is a recognized fact that a “media dominated” period multiplies around texts a type of discourse unknown in the classical world, and a fortiori in antiquity and the Middle Ages, periods in which texts frequently circulated in their almost raw state, in the form of manuscripts lacking any formula of presentation. (Genette 262-3)

In the cutthroat world of modern publishing, publishers increasingly insist that authors not only conduct interviews, but create supplementary materials, from tweets to podcasts, to promote their books across digital platforms. While Genette acknowledges that some readers may avoid any paratextual knowledge about the materials they are reading, he also contends that such knowledge inevitably shapes the reading experience. In an age of media super-saturation, it is nearly impossible to avoid learning about an author or text at some point. As Genette argues, once readers obtain information from beyond the confines of the “raw text,” it is no longer possible to read the material without its influence: “those who know it do not read in the same way as those who do not, and anyone who denies this difference is making fun of us” (266). While paratexts may appear and disappear with different editions, digital archiving, or authorial suppression, the paratexts that readers encounter influence their interpretations of their reading.

Although this chapter will focus on the interplay of paratextual constructions of authorial identity and postcolonial cli-fi, I have no desire to redeem a widely discredited

method of analysis that employs biographical interpretation to reveal a text's supposed "meaning." Like Barthes, I have no faith in any singular message handed down by an unimpeachable Author-God (146). For Brouillette, the purpose of considering authorial paratexts is to view the author as a figural cipher, "based in a set of significations that mediate between the writer in the world and the world of the work, so much so that interpretation often identifies aspects of an author's posturing that the writer in question would most likely discredit" (44-5). For me, the intention is more to assess the impact of paratexts, specifically those that detail the activist work of authors, on Barthes' ideal replacement for both the Author and the Critic – the Reader. For Barthes, the reader is a space where all of the competing and contradictory threads of textual meaning can converge and coexist, but the Reader is without personal identity. Barthes writes:

The reader is the space on which all the quotations that make up a writing are inscribed without any of them being lost; a text's unity lies not in its origin but in its destination. Yet this destination cannot any longer be personal: the reader is without history, biography, psychology; he is simply that *someone* who holds together in a single field all the traces by which the written text is constituted.

(148)

But Barthes' ideal, *tabula rasa* Reader is no more authentic than an Authorial deity handing down a singular truth. To believe that constructed aspects of authorial personae do not influence the reader is to become, as Genette would say, the punchline of a joke. Instead, it seems imperative to examine how authorial activism impacts, alters, and expands upon the imaginative work begun in novels that figure around humanist and environmental problem solving.

While many literary authors still harbor apprehensions about participating in social-media, the majority have begun to see it not simply as an avenue for self-promotion, but as a way to carefully construct how readers (and potential readers) perceive authorial projects. Increasingly, publishers expect authors to bring an audience with them, and social media is one of the most popular ways to ensure an established reading public. As publishers began their push for authors to join digital platforms, however, many authors feared that it would mean ceding their right to privacy, alongside the expectation of free, topical, regular content that could distract from the literary process. Writing about a few authors who excel on social media, Kate Gwynne alleges that many writers “retreat in fear like cats avoiding a cold bath.” Meditating upon whether or not social media is toxic to writing, Rebecca Kauffman concludes that she works best in “a space ... in which the reader’s perception of me (as a person) does not exist.” But as social media becomes a more familiar tool, many authors have begun to see how controlling the narrative around yourself as author can be a potent tool for writers. The authors who are celebrated for using social media well often speak of its ability to introduce readers to their authentic self, but they rarely explicitly acknowledge that even that “authentic self” is at least a partial construction. Speaking with Broadside PR in 2017, novelist Celeste Ng stated:

I think the key to social media for authors is remembering this: its main purpose is really to show that you are a real human being who lives in this world. Readers don’t need to know every detail of your life (unless you want to share that!) — what I think most readers are hungry for is just knowing that this book didn’t come out of a vacuum, that an actual person wrote it.

Ng's acknowledgment that you don't need to share every detail of your life on social media is also a confession that a social media presence is always a simulacrum of a real person – a selection of carefully curated posts designed to portray a specific, cultured image. Author Andrew O'Hagan, too, suggests that literature in the digital age is perhaps more powerful because "some of us wish to work back to the human problems, driven by a certainty that our computers are not yet ourselves. In a hall of mirrors we only seem like someone else," acknowledging the ease with which people online masquerade as things they are not. He concludes that the Internet is particularly well equipped to spread inauthentic identities so widely that the line between truth and fiction is blurred to the point of invisibility. What is clear about authorial persona in the digital age is that authors have never before had so much control over how they are perceived, and so much reach to disseminate the narratives they construct.

Although both Indra Sinha and Amitav Ghosh have effectively used the web to spread awareness of their other activist projects, the paratexts we will focus on in this chapter are largely material, and not web-based. Sinha and Ghosh have both released non-fiction paratexts to supplement the activist work begun in novels, and have then used interviews to raise awareness about those supplementary projects. Although both authors rely upon the global influence the Internet offers, they have nevertheless hybridized traditional forms – relatively conventional modern novels and non-fiction books – to innovatively intervene in the reception of their works.

To more carefully consider the complex interplay between authorial personae and literary novel, it may help to examine Indra Sinha and his 2007 novel, *Animal's People*. Sinha's novel is a fictionalized account of one of the worst industrial catastrophes in

global history, the Union Carbide pesticide plant disaster in Bhopal, India. Sinha himself has campaigned and fundraised for the people of Bhopal since 1993, and he co-founded the Bhopal Medical Appeal, an organization that provides free treatment to those affected by pesticide poisoning (“Indra Sinha”). While both Sinha’s most famous novel and his life’s work have focused on the same cause, Sinha is adamant that both serve different purposes. Sinha has repeatedly made clear that *Animal’s People* is first and foremost a work of art. In an interview given shortly after the novel was listed for the Man Booker Prize, Sinha commented that he hoped “*Animal’s People* will help the Bhopalis’ long struggle for justice, but trying to teach Bhopal studies via a novel would kill the fiction” (“The Only Way...”). In another interview, he claims that the novel, as a work of art, has the unique ability to critique the limitations of more traditional forms of activism:

It has to be a work of art - if you will excuse me using that expression - first ... and if it can't succeed as that, it could have no power to change things either.

Whatever anger I feel is expressed through some of the characters, though not all of them, and Animal himself is very scornful of the activism. (Moss)

For Sinha, the paratext of his activism, publicized by the media blitz surrounding his Man Booker Prize nomination, works in concert with the consideration of activism within the text of the novel. Not only does the novel serve to spread awareness of a real-world tragedy and opportunity to provide aid, but it also shines a rare critical light on the potency of dominant forms of environmental and human relief work. Sinha is also attentive to methods through which to disseminate information regarding opportunities to aid the people of Bhopal via the publicity he receives as a well-regarded author, mentioning his real-world work in interviews without fail and including prominent links

on his website, which is included in every edition's "About the Author." The activism is a coda for the novel – a next step for readers who have been moved by the art – and the novel is a response to the inadequacy of years of activism.

Animal's People takes place in the fictional city of Khaufpur. The name comes from the Urdu word Khauf, which means fear and aptly identifies Khaufpur as a "terror-town": a fitting name for the thinly veiled fictional version of Bhopal, which has been a site of environmental terror since December 2, 1984 ("Biography"). On that night the Union Carbide Pesticide Plant released a toxic cloud of gas that descended upon the shantytowns outside, exposing an estimated 600,000 people to a devastating cocktail of methyl isocyanate (MIC) and other poisons. In the more than 30 years since the incident the two US-based petrochemical and biotech corporations responsible, first Union Carbide, and its eventual purchaser Dow Chemical, have refused to clean up the site, leading to continued exposure, both via air pollution and through groundwater contamination. Government figures estimate 15,000 people killed over the years, but those who have suffered the most may be the estimated 100,000 people born in the wake of the initial catastrophe who continue to face new and ongoing afflictions: MIC poisoning is associated with several severe physical and mental disabilities, including cleft palates, tumorous growths, ocular pain and damage, respiratory problems, and neurological disorders (Johnston 119, *Slow Violence* 448). By creating an analog for the catastrophe in the fictionalized Khaufpur, Sinha is able to both interrogate the subtle nuances of the specific disaster and its aftermath in Bhopal, while also drawing parallels to similar industrial catastrophes the world over. *Animal's People* condemns the neoliberal power structures that authorize transnational corporations to terrorize the

global poor and devastate the environment with relative impunity in the name of free-market capitalism.

Animal's People orbits Animal, a character who “used to be human once,” but whose spine, twisted at the age of six from the embodied toxicity of the chemical cloud, is no longer truly human or truly animal, but something in-between (*Animal's* 1). At 19, Animal has been asked to tell his story to an international journalist, and therefore he relates his account and his experience through a series of tapes. Orphaned Animal is essentially his own caretaker, living through grifts on the streets, until he falls in with a group of local activists determined to hold the “Kampani,” the unnamed avatar for Union Carbide and Dow Chemical, accountable to the people of Khaufpur. These local activists, Zafar, Nisha, Farouq, and Somraj are thrown into disarray when an American doctor, Elli Barber, arrives in Khaufpur to offer free medical care for all afflicted by the Kampani's poisons. Her arrival coincides with an important court date – one that promises to actually command the attention of Kampani officials – and the activists are suspicious that Elli could be a corporate spy, but painfully aware that to tell Khaufpuri's to shun her clinic will deprive them of the medical attention they so desperately need.

While much of the critical work on *Animal's People* analyzes its potency as an environmental novel, less has been done to explicate Sinha's trenchant critique of the politics and intrigue of international activism. Although Rob Nixon's famous essay “Neoliberalism, Slow Violence, and the Environmental Picaresque” is predominately interested in the groundbreaking way Sinha dramatizes “the occluded relationships of transnational space together with time's occlusions,” making the slow violence of environmental catastrophes visible in a way it often is not, he also touches on the means

through which corporations vilify and discredit even the most well-meaning outsider aid workers (444). Nixon astutely notes the ways in which well-funded corporations have weaponized science, funding studies that can sow just enough doubt to avoid legal penalties:

In Khaufpur—as in Bhopal—the transnational corporation withheld from the afflicted community details about the chemical composition of the insecticides it was producing at the site, profoundly weakening remedial prospects by denying those exposed precise scientific information. Small wonder that, when an American doctor arrives to open a free clinic in Khaufpur, local activists mounted a boycott, viewing her as an agent of tendentious Kampani science—science whose long-term remit is to generate a circular narrative that will confirm the larger narrative of corporate self-exculpation or, at the very least, oil the machinery of doubt. From this skeptical perspective, the scientific process, like the legal one, provides further temporal camouflage, ostensibly uncovering what happened while deferring and occluding any decisive, actionable narrative.

(“Neoliberalism” 456)

In the world of Khaufpur, the Kampani is able to outspend its victims and control the narrative of what took place, further victimizing the people who have already had their bodies and homes contaminated by biocides. By making information a tool of further oppression, Kampani agents have made the people of Khaufpur suspect of anyone equipped with expertise, which is necessary to help them remediate some of the worst effects of the poison.

The circumstances of Elli's arrival immediately sets the local activists on edge, as they have just convinced a local judge to consider seizing the Kampani's assets if they do not appear in local courts to determine their responsibility for the disaster at the factory. Zafar's gang – saints to the slum folk, subversives to local government officials looking to avoid any trouble, and “just a bunch of fucking do-gooders” according to Animal – are dubious that their underfunded and under-reported plight would be of sudden interest to Americans without some stake in the findings (27). As Zafar notes, if the Kampani were forced to appear in court, its first plan of defense would be to argue that “the situation is not as bad as alleged” (69). Zafar maps out a scenario that is simultaneously paranoid and plausible, detailing the lengths a large corporation could undertake to use science to obfuscate the reality of the environmental poisoning that the Khaufpuri's know through lived-experience:

“Thousands more claim that your factory has poisoned their water and made them sick. To refute them you'll say that whatever may be in the wells, it does not come from the factory, that the chemicals in the factory don't cause those kinds of illnesses. To make such arguments you need facts and figures. You need case histories, a health survey. Now do you see? Abracadabra-funtootallamish! Out of the blue appears an Amrikan to start a health laboratory.” (*Animal's* 69)

The Kampani is the only obvious entity with a vested interest in funding Elli's research, and her funding is a matter of some suspicion, too. As Animal points out, while there are other “Amrikan” volunteers in Khaufpur doing work from “teaching to planting herb gardens,” none of it goes as far or does as much good as a clinic might. To provide real, concrete aid to the people of Khaufpur, there must be significant money involved – the

kind of money inaccessible to the vast majority of individuals (*Animal's* 73). Although the gang acknowledges that it is possible that Elli is there for purely altruistic reasons, they also feel it's not a risk they're able to take. If their initial anxieties are correct, and Elli harbors ill intent, any patients could be used to derail the judicial success of the Kampani's victims.

Zafar's suspicions are not purely based on logical, if hypothetical, reasoning, but on direct experience with Kampani officials. When lobbying the people of Khaufpur to resist Elli's clinic, Zafar reminds them of the "Thighs-of-fate," which *Animal* describes as an effective medicine to treat the gas poisoning on the night of the toxic cloud. As he explains, the treatment was stopped after "Some bigwig let slip that the Kampani bosses from Amrika had rung up their best friend the Chief Minister and told him to stop the thighs-of-fate," simply because "giving relief this thighs-of-fate somehow also proved that the illnesses could pass to future generations. The Kampani was afraid of this knowledge getting out because it might cost them in a court case, so they had the thighs-of-fate stopped and many were lost who could have been saved" (112). This relatively minor plot point hints at a particularly abhorrent series of actions that took place in the immediate aftermath of the Union Carbide disaster, and speaks to twinned prongs of Sinha's activist agenda, and his nuanced awareness of the ways in which the literary work of the novel cannot simply replicate his real-world altruistic priorities.

As victims of gas poisoning desperately sought medical aid in December, 1984, doctors struggled to treat them, in part because Union Carbide refused to tell medical officials the chemical makeup of the gas, claiming it was a "trade secret" (Edwards et al. 24). Reports indicate that officials from Union Carbide India Limited (UCIL) reported

that the gas was “nothing more than a potent tear gas,” and that washing the eyes of victims with water should resolve any medical problems – instructions that belied the evidence provided by thousands of human and animal corpses (Sarangi). Doctors on the scene quickly suspected cyanide poisoning, both because of the rapidity of the onset of death, symptoms such as syncope and extreme weakness, and autopsy evidence, and began distributing the drug sodium thiosulphate, the most effective known cyanide antidote (Sarangi).²⁸ According to Dr. B. B. L. Mathur, the dean of Gandhi Medical College in Bhopal at the time, the patients who received sodium thiosulphate “showed overall improvement” (qtd. Nayar 56). The Union Carbide Corporation (UCC) initially supported the use of the drug, only to reverse their stance three days later, ostensibly under legal guidance. In his memoir *25 Years of Bhopal Gas Tragedy: Inside Story and Untold Truths*, Dr. N. R. Bhandari writes:

After studying the literature, I felt the drug (sodium thiosulphate) should have no adverse effect; if it does not do any good, it will not do any harm. It was worth taking the chance and we used it on many patients. Ten days after the disaster, UCC’s medical director initially supported mass administration of thiosulphate but, in another telex message three days later, forbid it. Soon, Carbide’s ally in the state bureaucracy and health services director Dr M.N. Nagu sent a circular to all doctors warning them that they would be held responsible for any untoward consequence. This effectively stopped any further administration of thiosulphate.

(57)

²⁸ Sodium thiosulphate is generally spelled with an “f,” as sodium thiosulfate, in the United States. I have retained the British spelling, which is also used in India, here, to be consistent with my source texts, which I quote in several places.

Although Union Carbide has never had to answer for this misdirection in court, most literature on the subject concludes that UCC was aware that the penalties of civil litigation would be significantly harsher if the victims were found to have suffered from internal rather than strictly topical damage. The efficacy of the medication suggested internal poisoning as a result of MIC, and lawyers therefore advised UCC to do whatever it could to halt the treatment (Sarangi).²⁹

The thiosulphate controversy is a potent example of the dangers inherent in allowing corporations greater freedoms than individuals. As Pramod K. Nayar writes in his recent *Bhopal's Ecological Gothic: Disaster, Precarity, and the Biopolitical Uncanny*, the cavalier politicization of the life-or-death treatment of the gas victims:

...demonstrates a nexus between biomedicalization and the neoliberalism that enabled UCIL to set up shop in India/Bhopal in the first instance. That is, the biomedicalization of the disaster and the “victims” is linked inextricably to the freedoms granted to UCIL to conduct its production processes with no responsibility towards the local population and the risks they (the Bhopalis) lived under, as all the texts indicate. The contradictory messages regarding possible antidotes is not merely an instance of skewed biomedical advice: it has everything

²⁹ Zafar also makes the point that some doctors continued to give injections, but the police “came, wrecked the shack, beat up the doctors” (*Animal's* 112). Even this anecdote is corroborated in accounts of the thiosulphate controversy, suggesting how desperate Union Carbide was to avoid any associations with cyanide, which was a chemical officials feared would ignite public passions worldwide based on its associations with Nazi death camps (Jensen 287). Within India, public pressure to provide victims with sodium thiosulphate mounted, and the government allowed a few wealthy victims to receive the treatment. The vast majority of victims, particularly those who were destitute, were still denied treatment. At one point the government ludicrously claimed that victims were too ignorant to be expected to produce urine samples to verify successful treatment, prompting protestors to arrive equipped with urine samples. Ultimately, six months after the initial leak, several volunteer doctors established the People's Health Clinic, and began administering thiosulphate against the government's directives. According to Derrick Jensen, after three weeks of operation, “Horried government officials recognized the clinic had become a rallying point for victims and moved to shut it down. At 1:00 a.m. on June 25 police raided the clinic on the grounds of ‘illegal occupation,’ arresting and beating nine volunteers” (287). At a peaceful protest the next day, police reportedly used clubs to beat men, women, and children indiscriminately (Jensen 288).

to do with UCIL's clout in ensuring that the true nature of the poisonous gas—
with elements of cyanide—is never revealed. (56)

In the aftermath of an immense human and environmental tragedy, the neoliberal paradigm allowed UCC to act out of responsibility to its shareholders rather than its victims. Perhaps as notably, a biomedical system that places financial blame and responsibility on individual doctors shows that it is not simply marginalized individuals who are devalued compared to corporations. In this circumstance, UCC threatened to take legal action against well-meaning doctors should their best attempts at treatment fail, despite maliciously withholding information that could have increased the odds of effective medical remediation.

In the world of the novel, Sinha refrains from detailing the nuances of the thiosulphate controversy, hinting at the limitations of genre. In *Animal's People*, the events surrounding the administration of thiosulphate is reduced to an unverified anecdote, and the veracity of the narrative is further called into question by the manner in which it is told. While many of the creative misspellings and phonetic spellings that populate the novel source from Animal, who claims little education, for all of his intellect, that is not the case with “thighs-of-fate,” which is quoted first from Zafar, the Khaufpuri's primary expert on the Kampani's misdeeds. Zafar's inability to correctly identify the treatment's name serves to highlight the rampant confusion that ensued in the aftermath of the gas leak, and to make it unclear if he himself has his facts straight regarding the “thighs-of-fate.” As importantly, the Khaufpuris themselves doubt that the Kampani's actions could be so malevolent. A voice from the crowd asks why the Chief Minister would have heeded such a cruel directive since the Kampani had already

withdrawn from Khaufpur (*Animal's* 112). The Khaufpuris agree to avoid the clinic, but more out of respect for Zafar's conviction than certainty that the Kampani is meddling with their treatment yet again – and the issue of the “thighs-of-fate” is tabled within two pages.

Sinha has been instrumental in bringing the facts of the issue to public knowledge, so it seems likely that the lack of detail about the thiosulphate controversy within *Animal's People* is not an oversight, but a careful authorial choice. Published in 2012, *The Bhopal Marathon: A Cry for Bhopal*, has done much of the work of compiling the letters, memos, and other documents that prove claims regarding the initial approval and then prohibition of thiosulphate treatments that UCC has invested a great deal of time denying.³⁰ The anthology was published by the Bhopal Medical Appeal, which Sinha co-founded, and was edited by him along with Tim Edwards and Sathyu Sarangi. Therefore the near-absence of that aspect of the aftermath of the tragedy from *Animal's People* may seem something of a mystery. The story surrounding the administration of sodium thiosulphate has all the makings of a compelling narrative – it boasts drama, violence, passion, intrigue, and clear villains – and Sinha's decision to include it as only a brief, vague aside in his fictional attempt to publicize the plight of Bhopal and places like it illuminates how his activism shifts depending on his intended reading public. In an interview with *The Caravan* at the Writers of India Festival in 2014, Sinha explains his rationale in some detail. He notes that most of the books concerning Bhopal use anger as their driving engine, which he contends limits the receptive nature of a general audience:

³⁰ For more information on the evidence of cyanide poisoning in the aftermath of the Bhopal disaster, along with Union Carbide's denials, see “The Union Carbide Disaster in Bhopal: A Review of Health Effects,” by Dhara and Dhara, and “Hydrogen Cyanide and Bhopal” by D. R. Varma.

Supposing you are talking to an audience of fellow activists, then you can be as angry as you like – they’re already on your side. But if the idea is to write something that goes out into the world and reaches new people, I think anger is a very off-putting emotion – even if it’s justified. You have to be subtler than that. And that’s why I tried to do something different.

Instead of including the thiosulphate as a rage-inducing, potentially alienating plot point in *Animal’s People*, Sinha has instead made it part of his paratextual corpus. If the reader of Sinha’s novel is already aware of his work surrounding thiosulphate controversy, the vignette will serve as a timely reminder of the sinister maneuvers undertaken by the Kampani’s real-world referent, and foreshadow some of the techniques attempted by Kampani agents within the novel. If, however, the reader is not yet aware of thiosulphate and Sinha’s other work, this vignette serves a very different purpose. If readers wonder whether Zafar and his group are being unfair, accusing the Kampani of incomprehensible levels of immorality, their most efficient option is to look into Sinha’s other work, uncovering the fruits of evidence-based investigations he himself has sponsored. Because “thighs-of-fate” is unlikely to be a search term that guides readers to a quick and easy synopsis of the thiosulphate controversy, as the spelling is dramatically different from the actual spelling of the drug in question, it is an effective tool with which to send readers to look more deeply into the other work of Sinha, specifically. Moreover, the calculated misspelling of “Thighs-of-fate” is disorienting enough that it makes the reader pause, as it references a piece of jargon that is probably not familiar for people outside of the medical community. The entire scene both piques interest in the real-world events that inspired

the novel and initiates readers into the web of misinformation and confusion that engulfed the Kampani's victims.

Despite the Khaufpuri's suspicions, Elli is as aware as they are that the Kampani and its agents are willfully misusing information. In a conversation with her ex-husband, Frank, now serving as one of the Kampani's lawyers, Elli describes the heart-wrenching maladies she has seen among the populace. She implores him: "Can't you see that hiding behind trade secrets is totally wicked? There are people back home who know exactly what those gases do to the lungs, to the eyes, to the uterus. ... If they withhold information that could save lives, that's murder" (*Animal's* 322). Despite her pleas, however, it is clear that Frank is already trying to turn the information she herself has collected into a tool to use against the Khaufpuris. Sinha tellingly weaves his line of questioning into the narration, refusing to give him quotation marks and switching to third-person pronouns, stripping Frank of his individual voice: these questions are not his alone, but talking points of transnational industrialists who prioritize profits over people. He ventriloquizes: "... in what ways specifically is the water affecting people's health? What kind of illnesses are showing up? Has she seen the evidence with her own eyes? How can she be sure the chemicals in the factory are to blame?" (*Animal's* 322-3). When Elli repudiates his attempts to misinterpret her findings, Frank abandons his efforts to appear empathetic, turning to a more transactional tack. Frank offers to delay a deal being drafted that would disrupt the court proceedings, but openly acknowledges that he doesn't care about doing "a good thing for the people of this town" (*Animal's* 324). Instead, he proposes that Elli return to the states with him: exchange something she wants, reparations for the people the company he represents have wronged, in return for

his desire to have her return home to America with him, ostensibly to reconstitute their dissolved marriage.

Sinha's choice to tether the fate of the people of a city to the relationship drama of a secondary and tertiary American character, respectively, is an intriguing meditation on scale. Elli and Frank's interaction verges on maudlin, and it is un compelling for myriad reasons. The readers do not know Frank; he has appeared late on the scene, and is not well-fleshed enough to be a proper literary villain, despite his heavy-handed monstrosity in this one scene. Similarly, Elli has remained something of an enigma throughout the text, resisting the romantic sympathy afforded Nisha, the other female love-interest within the novel. Nixon notes that novels that deal with slow violence "suffer from a drama deficit," and therefore "risk resorting to sentimentality and political moralizing as substitutes for arresting spectacle and narrative tension" ("Neoliberalism" 449). The romantic sentimentality here is so poorly wrought, particularly in contrast to *Animal's* well-hewn unrequited lusts and Nisha's complicated veneration of Zafar, as to stand out in the text. But when viewed as a parallel to how the American industrial complex views the value of human lives, this narrative arc begins to make sense. Frank would believe that the marital happiness of one white, American man would be worth 100,000 lives of the most impoverished people living in the slums of India. His passionless attempt to revivify a dead romance is an apt metaphor for how marginalized communities worldwide are dehumanized through the apathy of local and international elites, none of whom view them as fully worthy of human rights.

Sinha's storytelling technique comes from his time and research in advertising, and examining some of the strategies he learned there can help explain why *Animal's*

People is such an effective text for investing readers in a particular type of environmental and humanitarian tragedy. In the 2014 article “Chemicals for War and Chemicals for Peace: Poison Gas in Bhopal, India, and Halabja, Kurdistan, Iraq,” Sinha describes his transition from advertising to activism in some detail. In 1990, he was invited to pitch for the account of Amnesty UK. After sifting through their prior ads and accounts, he and his art director arrived at the conclusion that meaningful ads are long. His ad director, Neil Godfrey, reportedly told the Amnesty representatives that “Your files are full of stories that will appeal and move people. If we can tell these stories, people will respond. But to tell them properly we need big spaces” (125). Amnesty reportedly ignored their advice, and opted for smaller copy, forcing Sinha and Godfrey to scramble for other techniques. Over the years, they learned that two additional strategies appeared to bring in the highest donations: ads needed to report unvarnished truth, even if it was shocking, so that people could not be comforted by sugar-coating, and ads were most effective when they instilled a sense of personal anxiety (126-28). While *Animal’s People* is a conspicuously different forum than a two-page ad in a Sunday paper, close inspection reveals that Sinha has brought all of his fundraising experience to bear in the pages of the novel.

It goes without saying, almost, that *Animal’s People* is long enough to allow Sinha to tell any number of heartbreaking human-interest stories. The main character of *Animal* is inspired by a real person Sinha heard about who lived in Bhopal, and many of the characters are reportedly based on people Sinha encountered during his work with the Bhopalis (Thwaite). Sinha has been outspoken about his near-constant frustration with the funding limitations of trying to relate detailed, nuanced stories of environmental destruction and human heartbreak within the confines of newspaper ads, often only a

third of a page long, and having the opportunity to tell those stories in a 366-page novel seems like the obvious resolution to the problem. Even if the novel form limits Sinha's reach, appealing only to readers who would choose to read it, rather than being presented to every reader of a major newspaper, Sinha has made the most of the extensive press coverage of his novel, mentioning his activism in every interview I have found.

Sinha's infamous bluntness is also on full display in *Animal's People*, though it's attributed to Animal himself. In the first section of the book, Animal announces that he will not shy away from telling the truth, no matter how crass, horrifying, or alienating it may be. Speaking directly to the audience, Animal announces "I can't make fancy rissoles of each word. Blue kingfishers won't suddenly fly out of my mouth. If you want my story, you'll have to put up with how I tell it" (*Animal's* 2). Animal's announcement echoes Sinha's arguments with libel lawyers throughout his advertising career, who asked him repeatedly to temper the words he wrote, to little avail ("Chemicals" 134). Sinha discusses the success of one of his first humanitarian campaigns to aid street children in Brazil, in which the copy read: "Brazil has solved the problem of how to keep kids off the streets. Kill them" ("Chemicals" 126). The provocative nature of the ad drew both attention and outrage, prompting, according to Sinha, many new members to Amnesty UK and "a protest from President Collor de Mello" ("Chemicals" 126). In the case of *Animal*, as in the case of the ads, the intentionally antagonistic tone sends an additional message: if we are capable of allowing such atrocities, surely we must be capable of discussing them plainly.

Sinha's final lesson from advertising, that personal fear is the greatest motivator to garner interest in environmental and humanitarian catastrophes, is significantly trickier

when it comes to dramatizing the plight of victims of chemical poisoning in developing nations. As Pablo Mukherjee writes in his consideration of toxic postcoloniality in

Animal's People:

The legal wrangle over accountability and compensation seemed to expose the premises that environment, and indeed, the very concept of the human carried radically different values in the global north and south. It underlines the urgent need to rethink and reframe the issue of universal rights, both of humans and nonhumans, as a bulwark against the recurrence of such devastations amongst the most vulnerable beings on earth. ("Tomorrow" 217)

So much about the situation in Bhopal, and its doppelgänger Khaufpur, has at its root an inherent dispute about the value of life in different parts of the world. How, then, to make this situation feel personal to an audience of readers who mostly live and work in the global north? Sinha notes that in his advertising campaigns, the only way he and his team could compel British readers to care about Saddam Hussein's use of chemical weapons against Kurdish victims was to suggest that he might do the same against Allied troops ("Chemicals" 128). The same threat is less credible when levied against UCC, particularly because the plant in Bhopal had a twin in West Virginia that did not suffer the same fate.³¹ While the gas leak in Bhopal can technically be viewed as an accident, Sinha contends that the ruthless cost-cutting measures that were undertaken in Bhopal and not in the similar plant in West Virginia suggest a reckless, and essentially

³¹ In 1982, a safety audit of Union Carbide's Indian plant identified 61 safety hazards the company needed to address. UCC responded by increasing safety measures in the MIC plant in West Virginia, but in Bhopal they cut costs further. As Sinha writes:

Between 1980 and 1984 the workforce was halved. The crew of the MIC unit was slashed from 12 to six and its maintenance staff from six to two. In the MIC control room, a single operator had to monitor 70-odd panels, indicators, and controllers, all old and faulty, which often failed. Safety training was reduced from six months to two weeks, reducing it in effect to slogans, but the slogans were in English so the workers could not understand them. ("Chemicals" 140)

intentional, disregard for specifically non-American human life. He notes that MIC must be kept at a temperature of zero degrees centigrade to keep it from reacting explosively with itself, but in Bhopal UCIL cut the refrigeration on the MIC tanks to save an estimated \$37 worth of Freon gas a day (“Chemical” 140-1). Because of more stringent regulations in the U.S., and perhaps even more because of basic empathy for the American public, the same cost-cutting technique was not even suggested on the tanks in West Virginia (140). As Sinha notes, Bhopal, and other similar incidents in the global south, almost all stem from “the ruthless determination of corporations to make profits at any cost, aided by the collusion of politicians who facilitated their deals and shielded them from justice” (“Chemical” 139). While similar incidents certainly happen in the developed world, they mostly take place in low-income communities, often to people of color, who typically have less access to the media and are further inhibited from generous public reception because of systemic classism and racism.

For Sinha, the closest parallel to the gas leak at Bhopal, for an American audience, is the September 11 attacks of 2001. Animal opens his description of his attacks in a celebratory tone, noting that when watching it on the television in the local chai house he “clapped! I thought, fantastic! This plane comes out of nowhere, flies badoom! into this building. Pow! Blam! Flowers of flame!” (60). Animal’s celebration might be understandable – after all, an American corporation has engaged in a similar act of terrorism in his hometown – but it’s also the result of a misunderstanding. Animal quickly proclaims that the scene is “brilliant” special-effects, before being corrected by a devastated Zafar. Despite Zafar’s insistence, Animal maintains that the scene can’t be real:

Even after the second, third, fourth, fifth, and sixth planes hit and all those buildings fall, Zafar maintains it is not a movie. Zafar has to be wrong. Stuff like that doesn't happen in real life. Not in Amrika anyway. Here in Khaufpur it's different. Here in Khaufpur we had that night. Nothing like that has ever happened anywhere else. (*Animal's* 61)

In the aftermath of 9/11 in the United States, many American citizens expressed similar sentiments – an attack on U.S. soil was so unexpected as to feel unreal.

In the context of Khaufpur, the specter of the 9/11 terrorist attack does a great deal of rhetorical work. It showcases Animal's awareness that the treatment of the Khaufpuris in the aftermath of the gas leak is abnormal, and has been allowed to happen because the Khaufpuris are far away from global power centers. It shows a room of people who could be forgiven for loathing Americans because of the suffering they've experienced at the hands of an American company, nevertheless mourning for American losses. It contributes to the ambient dread of the novel, invoking an event that looms large in the American cultural imagination, and which Ma Franci, likely along with many Americans, viewed as a sign of "the Apokalis" (*Animal's* 62-3). Perhaps most importantly, it illuminates a subtle, multivalent relationship between the two incidents, despite the fact that the spectacular violence of each takes place decades apart. Even if the incident in Khaufpur was an accident, the violence of agents working on the Kampani's behalf, coupled with the Kampani's negligence, amounts to an intentional terrorist crusade. Sinha has written that Bhopal and the attack in Halabja, Kurdistan, Iraq, were eerily similar, despite one being part of a campaign of intentional genocide against the Kurds, and one being an industrial accident: in his words, "the distinction is

meaningless,” as the results were the same (“Chemicals” 139). In *Animal’s People*, the briefest of allusions to 9/11 is enough to make the reader draw the comparison between the events of September 11, the gas leak in Khaufpur, and their global implications.

As a final note, it seems possible that the 9/11 reference is also intended to reveal the underlying ideology that catalyzes catastrophes like 9/11 and Khaufpur. Incidents of American disregard for non-American life, not unlike the incident in Khaufpur/Bhopal, have led to the advent of terrorist organizations, and in the words of David Harvey, the rise of terrorist organizations has led America to shift from an attitude of neo-liberalism, which at least pretended to have global interests at heart, to one of neo-conservatism, which openly seeks power at the expense of others (11). As Neil Lazarus suggests, the American response to 9/11 – to ravage an already devastated Afghanistan – marked a turning point in international relations, in which:

...the veil has slipped from the face of the juggernaut usually called ‘globalisation’ (whose champions had been wont to speak of it as the tide, irresistible but beneficial, that would raise all boats) to reveal the unmistakable, and unmistakably brutal, face of US globalism: the power of the American state, now frankly projected and bent on world domination. (11)

In the call to arms Lazarus penned back in 2006, he alleged that postcolonial writing that does not directly write against much U.S. based neo-colonialism is not merely “mystificatory,” but is “actively malign” (21). In *Animal’s People*, Sinha deftly addresses the devastating consequences of unchecked neo-conservatism in a world in which imperialist social relations are intensifying, rather than dissipating. In so doing, Sinha’s novel explicates the personal stakes of American apathy regarding catastrophes like

Bhopal as clearly as an ad that warns British readers that their troops may be the next to suffer chemical warfare at the hands of Saddam Hussein. For Sinha, it is clear that corporate greed is writ large across the corpses of the populace in both America and India: civilians are the ones who will pay the price with their tortured flesh, either through warfare or through chemical contamination.

Although Amitav Ghosh's *The Hungry Tide* focuses more on the complex interaction of class, race, and animal welfare in vulnerable bioregions than capitalist development, his scholarly reconsideration of many of the same issues more than a decade later, *The Great Derangement*, brings his work under the umbrella of Huggan's goal for explicitly activist critiques of capitalist ideologies of development. Ghosh's early, somewhat didactic environmental novel has been the subject of much ecocritical discussion, and his recent paratext, which analyzes both the criticism and the goals of *The Hungry Tide*, demands that the novel be read through a new lens.

For Ghosh, one of the major issues of climate change is how it increases the risk faced by already vulnerable populations of both human and non-human life-forms. Ghosh notes that in the modern era, the needs and welfare of the nonhuman is a particularly taboo topic, making it less likely that the implications of human activities on climate change and environmental degradation will come to the fore. In *The Great Derangement*, he writes:

... it was in exactly the period in which human activity was changing the earth's atmosphere that the literary imagination became radically centered on the human.

Inasmuch as the nonhuman was written about at all, it was not within the mansion

of serious fiction but rather in the outhouses to which science fiction and fantasy had been banished. (66)

It is with that lacuna in mind that Ghosh's project in *The Hungry Tide*, seeks to illuminate the ideological infrastructure that leads to the reckless disregard for the welfare of disenfranchised humans and nonhumans. Ghosh has reported that *The Hungry Tide* was his first attempt to contest the dominant view of Earth as "a stage for the enactment of human history," but to instead make clear that it is itself a sympathetic protagonist (*Derangement* 6). This early foray into activism is worth considering as a compelling cli-fi narrative in its own right before assessing the ways its latter paratext shapes our reception to it (and, in fact, further elucidates some of its successes and shortcomings).³²

In *The Great Derangement*, Ghosh contends that the Anthropocene is evidence that nonhuman forces are humanity's interlocutors, and that they are capable of thinking "through" us. Ghosh argues that over the past decade, an interest in the nonhuman has grown, because:

...the uncanny and improbable events that are beating at our doors seem to have stirred a sense of recognition, an awareness that humans were never alone, that we have always been surrounded by beings of all sorts who share elements of that which we had thought to be most distinctively our own: the capacities of will, thought, and consciousness. (*Derangement* 30-1)

³² Ghosh himself would not define *The Hungry Tide* as cli-fi, although he has repeatedly mentioned its explicitly environmental goals. Ghosh defines cli-fi as "a new genre of science fiction" that he critiques for being "made up mostly of disaster stories set in the future" (*Derangement* 72). Using this definition, Ghosh lambasts cli-fi's ability to tackle the issues of the Anthropocene, arguing that novels about climate change must also be able to discuss the recent past and the present. Ghosh also contends that since science fiction in toto tends to focus on other worlds, it is ill-equipped to discuss climate change directly, since it is taking place in the here and now. In this chapter we are working with a more generous definition of cli-fi, which includes realistic novels like Ghosh's.

Building on anthropologist Eduardo Kohn's *How Forests Think*, Ghosh suggests that humans are constantly engaged in non-linguistic communiqués – from those as subtle as interpreting the sound of the wind to those as straightforward as analyzing the meaning of a dog's bark – but that language itself may serve as a barrier to us recognizing those exchanges for what they are. For Ghosh and Kohn, one of the reasons humans don't see non-linguistic communicative acts as such is because "the shadow of language interposes itself," and screens us from seeing these interactions for all their importance (*Derangement* 82).

Of course, not all humans have willingly accepted that nonhumans lack agency. As Philippe Descola writes in *Beyond Nature and Culture*:

Seen from the point of view of a hypothetical Jivaro or Chinese historian of science, Aristotle, Descartes, and Newton would not appear so much as the revealers of the distinctive objectivity of nonhumans and the laws that govern them; rather, they would seem the architects of a naturalistic cosmology altogether exotic in comparison with the choices made by the rest of humanity in order to classify the entities of this world and establish hierarchies and discontinuities among them. (63)

For Bruno Latour, the artificial hierarchies described by Descola are one of the principle projects of modernity; the splitting of the Gordian knot of the social (*Modern* 3). Ghosh goes so far as to say that the great majority of people were never convinced by theories of Cartesian dualism, but both he and Latour agree that the unity of the social must nevertheless be rendered. As Latour concludes, "If we do not change the common dwelling, we shall not absorb in it the other cultures that we can no longer dominate, and

we shall be forever incapable of accommodating in it the environment that we can no longer control” (*Modern* 145). In the age of climate change, Ghosh insists that mitigating the damage wrought by climate change depends upon recognizing the intimacy of humans and nonhumans. It should be of little surprise, then, that Ghosh’s early literary attempt to describe the flawed relationship of humans to the environment fixates on the complicated history of non-human animals, language, and communication.

Historically, language is more than just a means of communication: it is also a tool of oppression. In their foundational text *The Empire Writes Back*, Bill Ashcroft, Gareth Griffiths, and Helen Tiffin note that privileging the colonizer’s language is one of the key tactics through which to establish imperial control: “The imperial education system installs a ‘standard’ version of the metropolitan language as the norm, and marginalizes all ‘variants’ as impurities” (7). For Ashcroft, Griffiths, and Tiffin, agency, or the ability to act and to move from the position of object to subject, is bound up in the issue of language. In the postcolonial context, it is those who appropriate and transform the dominant language who are best able to achieve political and cultural agency, while those unable to communicate in the colonizer’s discourse are pushed to society’s perimeter (Ashcroft et al. 203-4). Similarly, marginalization has been inflicted on non-human animals for their communicative differences from humans.³³ As Cary Wolfe contends, humans have largely treated animals as complex machines rather than self-actualized subjects because of their presumed incapacity for language: if animals are deemed to be unable to “respond” in a two-way linguistic exchange, then they cannot participate in a truly ethical relationship, nor can they engage in the complex thought

³³ In the interest of brevity, “non-human animals” will be shortened to “animals” for the remainder of this chapter.

deemed critical for establishing subjectivity, intentionality, and agency (xvi).³⁴ In *The Hungry Tide*, Ghosh juxtaposes these parallel histories to reveal the flawed logic that has underpinned both, illustrating how the lack of a common language is more a tool through which to constitute the “other” than an actual barrier to agency. Throughout the novel, Ghosh examines the ways in which subaltern human and non-human agency is denied through the politics of language, and the devastating consequences of the objectification that inevitably follows, including the displacement of critical ecosystemic actants by execution, exile, or diaspora.³⁵ More importantly, though, Ghosh also works to reveal how a reconsideration of agency that does not presuppose language can lead to the development of a model of conservation that might simultaneously attend to issues of both environmental and social justice.

The Hungry Tide is set in the Sundarbans, an archipelago that stretches from West Bengal to Bangladesh. The brackish water that surrounds the islands continuously redefines their boundaries, and the mutable landscape and largely inhospitable environment has repeatedly challenged efforts at large-scale human developments. The region’s expansive mangrove forests host large numbers of endangered and globally threatened species, including tigers, crocodiles and cetaceans such as the Gangetic and Irrawaddy dolphin, and have drawn attention from myriad international conservation projects. The Indian part of the Sundarbans was declared a tiger reserve in 1973, a reserve forest in 1978, a National Park in 1984, a World Heritage Site in 1987, and a

³⁴ The discourse surrounding animal “response” is deeply indebted to Jacques Derrida’s sustained consideration of the animal in *The Animal That Therefore I Am*. In this context, “respond” is being used in the Lacanian sense of a display that reveals comprehension, as opposed to a mere reaction that is unaccompanied by understanding or analysis.

³⁵ The decision to employ the term “actant” as opposed to “actor” is influenced by Sarah Whatmore’s reconsideration of Actant-Network-Theory, and her assertion that the use of the term ‘actant’ as opposed to ‘actor’ better applies to both human and non-human agency (340).

Biosphere Reserve in 1989, which gained UNESCO recognition under its Man and Biosphere program in 2001 (“Sundarban Tiger Reserve,” “Sundarbans National Park,” “Sundarban Biosphere Reserve”). Describing the managerial issues of the region, the National Tiger Conservation Authority reports, “Human tiger conflicts are common.” In part, it is these very conflicts that have led many human inhabitants of the region to feel as though international conservation efforts aimed at the protection of large predators pit them against their regional human counterparts. *The Hungry Tide* characterizes the Sundarbans’ human population as being in constant flux, involving European utopian settlements, local villagers, and thousands of Bangladeshi refugees who settled on the island of Morichjhāpi in the late 1970s. As Mukherjee notes, the tragedy of Morichjhāpi, in which government agents massacred, molested, and dispersed the refugees over three days in May, 1979, was partially bred by environmental rhetoric that framed the refugees as “competing for scarce resources *against* other ‘natural’ agents” (“Surfing” 149, italics original). Ghosh suggests that the villagers of the Sundarbans, afraid of unwanted government intervention, were also largely reluctant to aid the refugees.

Such complex interspecies and intercultural dynamics in the Sundarbans allow *The Hungry Tide*’s characters to physically convene, despite their drastically different backgrounds, methods of communication, and worldviews. The novel opens upon Piyali Roy, an American cetologist of Bengali ancestry, who is on her way to the tide country to conduct a study of the Irrawaddy and Gangetic Dolphins once known to populate the region. En route she meets Kanai Dutt, an affluent New Delhi translator. Kanai’s aunt, Nilima Bose has summoned him to read his late uncle Nirmal’s final written work, composed during the Morichjhāpi massacre but only rediscovered 25 years later. These

characters are clearly and early aligned with their political sympathies: Piya is a liberal Western conservationist whose study of the Sundarbans' fauna implies uncomfortable parallels to the colonial census; Kanai is a Capitalist entrepreneur and member of the cosmopolitan national elite; Nirmal is a Marxist sympathizer and one-time agitator; and Nilima is a service-oriented nationalist who runs the Badabon Development Trust, "widely cited as a model for NGOs working in rural India" (*Hungry* 17).³⁶ Piya's research leads her to illiterate local fisherman Fokir Mandol, whose wealth of traditional ecological knowledge is presaged by his very name, which references regional "fakirs," or mendicants who are believed to have spiritual support and sacred knowledge of the natural world (Anand 24). As the narrative proceeds, Piya's search for cetaceans leads deep into the tide country's mangrove jungle, while Kanai's search for information about his uncle's death leads him to examine the region's history more closely. The narrative shifts between Piya and Kanai's perspectives, with Nirmal's intermingled writings offering an account of the region's history that feels anachronistically immediate.

In *The Hungry Tide*, the confluence of languages is shown to have ecosystemic consequences. Nirmal describes the Sundarbans as a bioregion shaped not just by geophysical forces, but by language itself: "... *the mudbanks of the tide country are shaped not only by rivers of silt, but also by rivers of language: Bengali, English, Arabic, Hindi, Arakanese and who knows what else?*" (*Hungry* 203, italics original). While Nirmal alludes to the ways in which migratory human populations, metonymically represented by their spoken languages, have impacted the sociopolitical landscape of the

³⁶ As Benedict Anderson notes in his *Imagined Communities*, the census creates a fiction that it both includes everyone and that everyone has a clearly delineated place in society (166). Similarly, Piya's initial imagining of a study that might help conservationists track and manage dolphin populations imagines similar infrastructure to benefit overseas management and control over regional animal and human populations.

Sundarbans, the text also allows for the more literal interpretation that both human migrations and (mis)communications have helped shape the extra-human environment. Ghosh depicts the Sundarbans as an area in which verbal exchanges frequently fail to convey critical information not because of language barriers, but because prejudice inhibits reception. In *The Hungry Tide*, such miscommunications have grave consequences not only for human populations, but for the environment as a whole.³⁷ The text's main cast works through such miscommunications, modeling ways to empathetically communicate despite disparate ethnic, national, educational, and socioeconomic backgrounds.

Tensions of language and translation are introduced early in the novel as Piya struggles to navigate her way to the tide country where her English will be essentially useless for purposes of communication. Upon meeting en route to the Sundarbans, Kanai expresses concern at Piya's inability to speak Bengali or Hindi – a concern Piya almost immediately seems to dismiss. She suggests that she has little use for conversation because “work takes me out on the water for days sometimes, with no one to talk to – no one who speaks English, anyway” (*Hungry* 10). This casual dismissal of those with whom she is unable to speak as “no one” echoes a long history of language politics in

³⁷ One notable example involves the development of Port Canning on the banks of the river Matla. Ghosh describes multiple attempts to warn English colonial powers that their chosen location was unviable. The river's name means “mad” in Bangla, and locals knew from experience that the river was unpredictable (*Hungry* 235). Englishman Henry Piddington, who coined the term “typhoon,” also campaigned for the Port's relocation, but went unheeded as well. Ghosh suggests authorities ignored Piddington because “he stood very low in the Ingrej scale of caste” (*Hungry* 237). The wave surge that destroyed Canning only four years later led to its almost total abandonment by human inhabitants, but Ghosh works to emphasize the ways in which ill-planned human settlements like the one at Canning can also contribute to changing river patterns. As Nilima notes, the Matla bears little resemblance to itself even 25 years before (*Hungry* 22). Some geomorphologists have speculated that the natural evolution of rivers in the Ganga-Brahmaputra delta (the Sundarban region) has been exacerbated by human intervention. As Kalyan Rudra contends, this is particularly true “where rivers are embanked and no allowance made for their migration through meandering and avulsion” (87). Canning, built directly on the “Matla's flanks” allowed for no such riparian migration (*Hungry* 237).

which those unable to access the dominant language are classified as being less worthy of personhood.

Much early imperial expansion depended upon a narrative of European superiority, and comparisons of colonial subjects to animals often served to justify their subjugation. Gregory Radick describes how Richard L. Garner, a renowned scientific mind in his day, set out to prove that animals were capable of rudimentary forms of language in large part to help prove prevalent theories about language and European superiority in the late 19th Century:

that evolutionary change was gradual and progressive; that its highest products were humans; that the lowest humans were the savage or barbarous races, such as the Fuegians or the Australian aborigines or the Hottentots; that the highest races were the civilized ones, especially the white European civilized ones; and that human racial highness and lowness showed itself in body as well as mind, including language. (6)

That racial prejudice pivoted around language politics and bestial comparisons was not lost upon early anticolonialists. Frantz Fanon, describing the condition of the black Antillean man, contends that “the core of theories which represent the black man as the missing link in the slow evolution from ape to man” forced him to justify his personhood by assimilating the language of the colonizer (1-2).

Instead of simply using Piya as a mouthpiece for such outmoded evolutionary theories, Ghosh focuses on the ways in which Piya’s vestigial prejudice is troubled by her encounter with Fokir. Almost immediately after finding herself on Fokir’s boat without a common language, Piya notes that Fokir has nonetheless found a way to convey

personhood upon her despite their inability to speak to and comprehend each other: his willingness to make space for her and include her in family rituals “let her know that despite the inescapable muteness of their exchanges, she was a person to him and not, as it were, a representative of a species, a faceless, tongueless foreigner” (*Hungry* 60). Although seduced by Kanai’s offers to translate for her in conversation with Fokir, Piya ultimately determines that such an intermediary is unnecessary: she can understand Fokir “at a glance,” rendering verbal communication redundant (*Hungry* 275, 290). Moreover, Fokir ultimately saves Piya’s life because of his understanding of typhoons, and Fokir’s rich knowledge of animal behavior and tide patterns is a wealth of knowledge that becomes the foundation for Piya’s research.³⁸ As Piya comes to trust and rely upon Fokir as a local expert, she must also relinquish stereotypes that depend upon linguistic fluency to dictate a person’s value.

Ghosh continues to strip spoken language of its epistemological privilege by modeling the ways in which non-verbal communication are as important as the traditional “rivers of language” for understanding the nuanced ecosystem and cultural identity of the tide country. The assertion that animals are unable to communicate has frequently served as the dividing line between animals and humans. Human speech has been considered unique in its ability to impart information to other members of the same species (Radick 1). Emile Benveniste called language “the human faculty,” arguing that animals can be trained to respond to various man-made signals, but do not invent them on their own or interpret them as symbols (Benveniste 17, 24). Moreover, it is language that endows beings with the capability for complex thought and, consequently, intentionality or access

³⁸ Divya Anand notes that both Piya and Kanai utterly depend upon Fokir’s knowledge. For Anand, it is this dependence that elevates Fokir beyond the archetypal “noble savage.” (24).

to agency (Benveniste 23). Suspiciously, however, any attempt to bridge this abyss risks being perceived as an assault on humanity itself. As recently as 1980, research suggesting linguistic abilities in apes was so inflammatory that an international conference actually sought a ban on all animal language studies (de Waal 32). Such vitriolic reactions to new developments in the animal language debate seem to support Ted Benton's claim that conventional ways of thinking about animals "respond to the discovery of boundary-threatening abilities in non-human animals by continuous re-conceptualization of human-definitive powers (such as language) so as to keep the boundary in place" (17). In order to maintain an abyssal divide between humans and animals, definitional parameters are fabricated and arbitrarily reconstructed as necessary.

Instead of embroiling himself in the language debate explicitly, Ghosh challenges binaries that set humans in opposition to animals — and the natural world more generally — by subtly reconceptualizing agency as independent of speech events or verbal communication.³⁹ As Philip Armstrong notes in *What Animals Mean in the Fiction of Modernity*, the assumption that agency "necessarily requires a combination of rational thought and conscious intention" is already predicated upon an Enlightenment humanist paradigm that by definition prohibits the inclusion of non-human participants. Re-imagining agency might allow the animal to be something other than "a blank screen for the projection of human meaning, and might offer productive new ways of accounting for the material influence of the non-human animal upon humans, and *vice versa*" (3).

Moreover, such a project has significant implications for subaltern human populations as

³⁹ Roman Jakobson suggests that such a "speech event" depends upon an active interaction, in which an addresser sends a message to an addressee. In order to be operative, the speech event must be contextually comprehensible to the addressee, and the addresser and addressee must at least partially share a code of communication. Finally, such speech events demand some form of physical channel and psychological connection between communicants (66).

well, as Valerie Plumwood suggests that the project of recognizing nature and “othered” populations as “an active collaborative presence capable of agency and other mind-like qualities,” is a critical step in the process of combatting the enduring injustice of colonialism (Plumwood 60). Ghosh depicts human and non-human agents working collaboratively to shape the environment without depending upon verbal communication, and therefore guides the reader toward an understanding of the environment that refuses the Cartesian designification of nature that denies “othered” humans and non-humans agency on the basis of their inability to communicate in the dominant discourse. In the Sundarbans of *The Hungry Tide*, Ghosh details a world that is much more in line with Sarah Whatmore’s conceptualization of a plethora of networks of actants, all operating in relation to one another, that is “at once local and global, natural and cultural, and always more than human” (344). Although each of the text’s characters espouses a somewhat different perspective on the role of humans in the world-at-large, their disparate worldviews work in concert to reveal the abilities of non-human actants to impact the environment even without the capacity for language.

Ghosh’s model for the communicative and agential abilities of nonhumans in *The Hungry Tide* is clearly indebted to Latour’s conceptualization of Actor-Network-Theory.

Latour writes that in true ANT, non-humans:

have to be actors... and not simply the hapless bearers of symbolic projection. But this activity should not be the type of agency associated up to now with matters of fact or natural objects. So if an account employs either a symbolic or a naturalist type of causality, there is no reason to include it in the ANT corpus even though it might claim to be. Conversely, any study that gives non-humans a type of agency

that is more open than the traditional natural causality—but more efficient than the symbolic one—can be part of our corpus, even though some of the authors would not wish to be associated in any way with this approach. (*Reassembling* 10)

In *The Great Derangement*, Ghosh lauds this model of ANT, but even if he didn't, it would be clear that his non-human actants behave with intentionality that is beyond instinct, but which indicates a reaction to subtle external stimuli.⁴⁰

Ghosh varies models of non-human agency throughout the text, filtering each instance through the biases and understandings of various characters. In one notable instance, Piya limns a symbiotic relationship between Orcaella and local fishermen on the Irrawaddy River. Piya describes how she watched two fishermen seemingly summon a pod of dolphins, first by drumming on the boat's gunwale, and then by rattling their nets. Once the dolphins arrived on the scene and herded a school of fish toward the boat, the fishermen dropped their nets to make a large catch, pushing some fish into the mud of the riverbed, making them easy prey for the dolphins. This instance of teamwork could be dismissed as a circus trick, though Piya is careful to emphasize that this is "symbiosis between human beings and a population of *wild* animals" (*Hungry* 140, emphasis mine).

This focus on wildness seems to negate the possibility of training, instead suggesting that these creatures are interpreting the sounds made by the fishermen and responding

⁴⁰ As Latour himself notes, one of the main critiques of ANT is that it affords agency to all beings, and can imply that everyone "has the same chance" (*Reassembling* 63). It may seem an odd choice, then, for Ghosh to use ANT to detail some of the more egregious inequalities that are exacerbated by climate change and environmental degradation. Latour has responded to the criticism by noting that inequalities and power struggles can only be addressed:

...in a territory that has been opened up, flattened down, and cut down to size in a place where formats, structures, globalization, and totalities circulate inside tiny conduits, and where for each of their applications they need to rely on masses of hidden potentialities. If this is not possible, then there is no politics. No battle has ever been won without resorting to new combinations and surprising events. (*Reassembling* 252).

Ghosh's reclamation of ANT, then, may be an attempt to identify new sources of potential to buck the dominant power hierarchies that have so long suppressed the agency of marginalized humans along with nonhumans.

strategically. Considering this same scene, Christopher Rollason condemns Piya's acceptance of such symbiosis as being unforgivably naive, and indicative of her "imported, greenish view of the world": "Piya, true to type, tends to sentimentalise the animal world and its imagined beneficent relation to humanity" (6-8). Rollason suggests that Piya's naiveté is challenged later in the text when she witnesses villagers torturing a tiger while Fokir unrepentantly participates. This somewhat essentialist conclusion, that a combative relationship between humans and a species of predator negates the possibility of a symbiotic relationship between humans and other species, does not negate Rollason's point that Piya's perception of animal agency is largely anthropomorphic. Piya identifies with cetaceans at least in part because they exhibit somewhat human traits: they seem to recognize her and mourn their dead (*Hungry* 252, 285).

As if to emphasize that non-human agency is not simply imagined by the sentimental, or enacted by charismatic megafauna, Ghosh includes a less idealistic account of non-human agency in Nirmal's notebook. Describing a long-ago interaction with a then five-year-old Fokir, Nirmal recounts staring out over the *bādh*, or embankment, that protects the island of Lusibari from rough tides. In an effort to reveal the settlement's vulnerability, Nirmal asks Fokir to listen to the gentle scratching of crabs burrowing into this man-made barrier against the incursion of the "natural" environment. Nirmal tells the child:

Even as we stand here, untold multitudes of crabs are burrowing into our bādh. Now ask yourself: how long can this frail fence last against these monstrous appetites – the crabs and the tides, the winds and the storms? And if it falls, who shall we turn to then, comrade? ... Neither angels nor

men will hear us, and as for the animals, they won't hear us either.

(*Hungry* 172, italics original)

To explain the animals' deafness, Nirmal quotes Rainer Maria Rilke – animals “*already know by instinct / we're not comfortably at home / in our translated world*” (*Hungry* 172, italics original). To some extent, Nirmal's articulation of the dynamic of the tide country reifies the nature/culture binary, articulating an us/them scenario in which “natural” agents of crabs, tides, winds and storms will be the ultimate undoing of local humans. Nevertheless, Nirmal also challenges the traditional construction of the nature/culture divide, or at least the denial of animal agency, by troubling the conceit that animals might react to external stimuli but are unable to respond in any interpretive way (Wolfe xvi). Instead, he asserts that animal agents do not fail to respond to human cries because they are unable, but because they are privy to an understanding of the ways humans interact with the world around them that humans cannot access.

In *The Hungry Tide*, various ecosystemic actants are unable to access the mainstream discourse, and their subsequent objectification leads to dire consequences. Animals are overhunted, overfished, and decimated by the effects of humanity's incursion, both by local subaltern populations and by government appointed forest rangers tasked with protecting the region (*Hungry* 179, 242, 285). Animal predators prey upon human subaltern locals whose deaths go unremarked and unreported (*Hungry* 248-9). Government agents, in the name of ecological conservation, massacre refugees (*Postcolonial Environments* 110). As the novel proclaims the importance of each vulnerable actant to the wellbeing of the Sundarbans, both the reader and Piya are drawn toward the same conclusion: without ample consideration of the perspectives and

interests of invested international and local elites, marginalized local human populations, and the non-human actants of the local bioregion, international conservation efforts will either fail outright or will serve to further subjugate more vulnerable invested parties (*Hungry* 327). Such a collaborative effort, between local and global actants, is premised upon an expanded theorization of agency that recognizes that humans are not exclusively agential beings while attending to existing power asymmetries – the exact model that Richard Nash and Ron Broglio suggest might result in a stronger ecological awareness (2). But Piya’s plan, to develop a conservation organization informed by local voices and under the umbrella of Nilima’s NGO, still feels like an uncomfortably idealistic conclusion. As Divya Anand notes, “the increasingly apparent proclivity of global environment agencies to appropriate ‘community participation’ as a means to advance their own agendas and create new subjects of underprivileged people who were earlier invisible entities ... makes the resolution an uneasy one” (38). Piya, the head of this proposed organization, is still a first world elite with only the most rudimentary understanding of the locale (Anand 40). Terri Tomsy views the novel’s conclusion as “impossibly hopeful and flawed,” and attributes it to an effort to leave readers uncomfortably dissatisfied, driven to critically examine themselves and how they might “utilize the resources within capitalist globalization to contest the subjugation of communities” (63-4). The discomfort of the conclusion is heightened by the novel’s final lines, in which Piya and Nilima seem to be speaking at cross-purposes: a jarring end for a novel so consumed by issues of communication. Piya confides in Nilima that she can make her home wherever there are Orcaella, but Nilima’s response reveals how differently the two women think: “That’s the difference between us. For me, home is

wherever I can brew a pot of good tea” (329).⁴¹ With this back and forth, Ghosh reveals that both women are still all-consumed by the same concerns with which they opened the novel: Piya remains predominately invested in the welfare of one genus of endangered animal, while Nilima prioritizes humanist, imperialist, creature comforts. This could serve as a warning that those running conservation projects remain unable to attend to the needs of all regional actants, but perhaps it is also a promising acceptance of inevitable individual oversights. Neither Piya nor Nilima is able to understand the needs of all of the actants in the Sundarbans, but they have learned enough to know that they must recruit disparate voices, and assume a posture receptive enough to hear them, if they are to enact sustainable systemic change. By reconceiving the nature of agency by interrogating the language problem that has so long plagued postcolonial and animal studies, Ghosh brings the two fields into conversation in an attempt to develop a better understanding of the voices that must be included if conversations about conservation are to result in both social and environmental justice.

⁴¹ Elsewhere, Ghosh has discussed the role of tea as a key to reevaluating imperial history. In his 2012 keynote address to the Association for Asian Studies conference in Toronto, he interrogated why, “even as Indians drank Chinese tea from cups and saucers called, after all, ‘china’ did they think of England?” (Thomas et al. 930). In Ghosh’s reconsideration of the meaning of tea, he:

...spun a tale of dense connections between South Asian and Chinese traders, of the vibrancy of Asian economies before the coming of the West, of the transformation of Indian landscapes by tea plantations, of the opium traded and the wars fought between Indian sepoy and Chinese soldiers, and of the cultural bridges built through love, translation, and the transmission of literary, religious, and botanical knowledge. (Thomas et al. 930)

Knowing of Ghosh’s meditations on the importance of tea beyond the pages of *The Hungry Tide* is yet more evidence of how contact with an authorial paratext can shape reader interpretation, as this alternative interpretation of tea’s symbolic meaning could remake Nilima’s closing comment something less frustratingly allegiant to an old-world colonial nostalgia, instead suggesting, perhaps, a reconsideration of the traditional axes of global power. That said, Ghosh’s comments about what tea should mean acknowledge what it most often does mean, symbolically, in India: Empire and England.

In the first part of *The Great Derangement*, Ghosh discusses *The Hungry Tide* at some length, in the context of the ability of the modern novel to grapple with the implications of the Anthropocene. He began considering the novel's efficacy in regards to climate change while writing *The Hungry Tide*, noting that he initially thought his struggles were particular to that specific novel, but that he has since concluded they have wider implications (*Derangement* 6-7). He writes:

I have come to recognize that the challenges that climate change poses for the contemporary writer, although specific in some respects, are also products of something broader and older; that they derive ultimately from the grid of literary forms and conventions that came to shape the narrative imagination in precisely that period when the accumulation of carbon in the atmosphere was rewriting the destiny of the earth. (*Derangement* 7)

Ghosh identifies five major aspects of the novel form that render it insufficient for the monumental task of articulating the dramas of an age in which humans have come to represent a biogeophysical force: in the Anthropocene, extreme weather events are happening with increased regularity, but the realist novel is meant to adhere strictly to the laws of probability, and anything exceptional feels like a contrivance; the world of the novel only becomes real because it has finite boundaries of time and space, but the Anthropocene concerns “forces of unthinkable magnitude that create unbearably intimate connections over vast gaps in time and space”; serious novels are innately humanist, but the Anthropocene is defined, for Ghosh, by the recognition that “there are other, fully aware eyes looking over our shoulders”; in the modern novel, particularly in nations that were leading the way in the “Great Acceleration” of the late twentieth century, the focus

is on the individual, but the Anthropocene demands that we think of ourselves as part of a collective; and finally, that novels are commonly rendered purely through text, but in the Anthropocene we must engage with nonhuman forces, and find alternative, non-linguistic methods of meaning-making (*Derangement* 23-4; 63; 66; 79; 84).

The Great Derangement is a particularly interesting paratext to *The Hungry Tide* because it is the rare example of an author identifying and analyzing his own book's shortcomings, and, in many cases, attempting to remediate them. Ghosh contends that the obstacles that bar "serious" novels from effectively addressing climate change are not insurmountable – he names Barbara Kingsolver's *Flight Behavior* and Liz Jensen's *Rapture* as rare successes – but clearly does not consider *The Hungry Tide* as one of the more competent attempts (*Derangement* 73). This is most clear in the sections where he undertakes a second attempt at writing about some of the dominant themes of *The Hungry Tide* in the genre of literary criticism, free from the confines of the novel he has already identified.

The agency of the nonhuman is one of the dominant themes of both *The Hungry Tide* and *The Great Derangement*, and Ghosh's instinct to rearticulate many of the same ideas regarding nonhuman communication and agency twelve years on implies both his passion for the subject and his anxiety that he has not been adequately understood. Discussing activist authors, Ghosh notes that many writers who are actively involved in environmental issues resist writing about the subjects of their activism in literature. He includes himself in such company, writing that he has "been preoccupied with climate change for a long time, but it is true of my own work as well, that this subject figures only obliquely in my fiction" (*Derangement* 9). Should readers come into contact with

The Great Derangement, however, it will inevitably shape their perception of climate change in *The Hungry Tide*, for Ghosh spends a great deal of time explicitly connecting nonhuman agency to climate change. In the age of the Anthropocene, Ghosh holds that “the earth has itself intervened to revise those habits of thought that are based on the Cartesian dualism that arrogates all intelligence and agency to the human while denying them to every other kind of being” (*Derangement* 31). For Ghosh, this proves “that nonhuman forces have the ability to intervene directly in human thought” (*Derangement* 31). And for readers of *The Hungry Tide* who have encountered *The Great Derangement*, there is no longer any question that the former is in fact a novel about climate change and not just environmental degradation and injustice. In light of his later work, the conclusions of *The Hungry Tide* expand to suggest that climate change can only be mitigated if we become receptive to the means through which nonhuman forces seek to communicate with us: it is an issue even more pressing than the preservation of a single vulnerable bioregion.

Ghosh argues that if the novel can’t accommodate global warming, then it has failed us, and he may well be right (*Derangement* 8). He presents a compelling account of all the ways that novels are uncongenial to the issue of global warming. Nevertheless, Ghosh concludes his section on how we tell the stories of climate change on a hopeful note, discussing the specific need to find a novel form that is not purely logocentric, suggesting that “new, hybrid forms will emerge and the act of reading itself will change once again, as it has many times before” (*Derangement* 84). With *The Great Derangement*, it seems that Ghosh has created a hybrid form of his own: one that pairs nonfiction with the novel, adding value, context, and the chance to clarify and correct.

Similarly, Indra Sinha has created a hybrid of *Animal's People* through his nonfiction accounts of Bhopal both before and after the composition of his literary magnum opus. By curating authorial personae as activists who are using their platforms to continue their environmental and humanitarian work, Ghosh and Sinha supplement their texts, modeling how inspired readers might direct their activist energies.

CHAPTER IV

SPECULATIVE DIASPORAS: HARI KUNZRU’S HISTORICAL CONSCIOUSNESS,
THE RHETORIC OF INTERPLANETARY COLONIZATION, AND THE LOCUS-
COLONIAL NOVEL

Climate change presents an imminent threat to human welfare, and we, as a species, must choose how we wish to proceed. The most recent meeting of the Intergovernmental Panel on Climate Change claims that “Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems” (Intergovernmental Panel on Climate Change 2). Moreover, the United Nations views climate change as a major driver of diaspora, estimating that climate-related refugees will reach record highs, and keep increasing, as long as climate change is allowed to continue unchecked (United Nations High Commissioner for Refugees). This premonition is becoming all too real as wars driven in part by the resource scarcity associated with climate change force people from their homelands in unprecedented numbers (“Figures at a Glance”). In light of the United Nations’ point, an understanding of the ways in which human behavior impacts ecosystems is more important now than ever. However, in response to threats to humanity, including those posed by climate change and environmental degradation, multiple agencies have responded not with a call to operate more consciously within planetary systems, but with plans for humanity to create a new human settlement on Mars.

The momentum behind plans for the colonization of Mars suggests that humans are embarking upon an entirely new type of diaspora, perhaps even more alienating than

any of the others that have come before.⁴² In the 20th Century, “diaspora” has most often been used to discuss forced dislocations and the resettlements that inevitably follow; diaspora is about the place where one both begins and ends. Much diasporic literature has foregrounded history, considering the circumstances that lead to diaspora as well as the exilic and diasporic communities that develop after. In light of proposals to develop human civilizations on Mars, however, diasporic writers and theorists have the opportunity to use their knowledge of terrestrial history to predict and influence a new diasporic model. As John McLeod writes, diasporas are “sites of recycling as much as of reinvention,” and there is no one more qualified to model the risks of salvaging environmental carelessness or social hierarchies that have made terrestrial society falter. As humans stand at the precipice of becoming interplanetary, driven in part by environmental threats, diaspora scholars must consider how such a migration might set a precedent that makes species-level diasporas the status quo, and how human settlement on Mars might impact planetary systems themselves. In this chapter, I examine the rhetoric surrounding proposed missions to Mars, arguing that it suggests that humanity is poised to export the same model of colonization that has led to so many terrestrial diasporas. I then consider what literary narratives might do to change the course of interplanetary colonization.

The history of environmental catastrophes and the mass human migrations that inevitably follow can offer critical lessons for humanity, as proposals to inhabit Mars become increasingly plausible. If we cannot find a way to assess, analyze, and reject the

⁴² Paul Gilroy defines diaspora as an “outer-national term which contributes to the analysis of intercultural and transcultural processes and forms. It identifies a relational network, characteristically produced by forced dispersal and reluctant scattering. It is not just a word of movement, although purposive, desperate movement is integral to it” (123).

cultural patterns that have allowed environmental degradation to go largely unchecked, we seem destined to repeat the same mistakes on Mars. The confines of anthropocentric histories, however, make it extremely challenging to catalog the ways in which human behaviors beget environmental calamity. Historian Dipesh Chakrabarty notes that human and natural histories have largely been kept in separate categories. Human histories cast people as exclusively biological agents, but this distinction collapses in light of anthropogenically motivated climate change: humans can no longer be seen as only impacting biological systems, but geophysical ones as well (206). Chakrabarty writes:

In unwittingly destroying the artificial but time-honored distinction between natural and human histories, climate scientists posit that the human being has become something much larger than the simple biological agent that he or she always has been. Humans now wield a geological force. (206)

Collective human action has altered the composition of the atmosphere, impacting Earth's physical processes, not simply those of the life forms that live on Earth. For Chakrabarty, neither natural nor human histories are sufficient to convey the magnitude of human impact on Earth (199). Moreover, he notes that humans impact geological processes as a species, and understanding ourselves as a collective is beyond our historical consciousness: "climate change poses for us a question of a human collectivity, an us, pointing to a figure of the universal that escapes our capacity to experience the world" (222). In order to remediate environmental damage on Earth, or to prevent similar destruction to new sites of habitation on previously unpeopled planets, it is necessary to find a medium through which to convey the implications of species-level human impact on planetary systems. Dominant modes of historical accounting are thus far insufficient.

Where mainstream histories have failed, however, radical literary experiments might begin to make inroads. Nigerian novelist Chinua Achebe contends that literature is critical for helping readers gain a new perspective on reality and the ways that reality may or must change, because literature enables “us to encounter in the safe, manageable dimensions of make-believe the very same threats to integrity that may assail the psyche in real life” (170). Achebe’s body of work focuses on the ways in which literature can help former colonial subjects imagine themselves as citizens of independent nation-states, but his point that literary narratives are able to “offer the kinetic energy necessary for social transition and change” has grander, solar-systemic relevance as human beings begin to consider the very real possibility of interplanetary colonization (167). The novel’s history as a tool of resistance and identity formation, along with its ability to create an imaginative space in which to consider possible solutions to complex problems, make it an important critical tool in ongoing plans for planetary redundancy.

Literary narratives have long been credited with triggering seismic changes in public belief, self-perception, and behavior.⁴³ Rachel Carson’s *Silent Spring* may be the poster child for environmental action as the result of a popular and literary (though not fictitious) book driving political action, credited with inspiring a public call for greater governmental protections for the environment and the cessation of DDT production domestically (Lear x). In a similar vein, Indra Sinha’s *Animal’s People*, inspired by Union Carbide’s refusal to compensate the people of Bhopal, India after a catastrophic accident at their chemical plant, has inspired readers worldwide to contribute resources to the Bhopal Medical Appeal & Sambhavna Trust (“Bhopal”). While these instances model

⁴³ See Elizabeth Ammon’s *Brave New Words* for a sustained consideration of how literature “offers workable ideas and inspiration in the real-world struggle to achieve social justice and restoration of the earth” (xiv).

the power of literature to motivate major political action, the vast majority of novels make subtler, but still impactful, waves. Evidence of this abounds even among potential Martian colonists: 70% of the remaining candidates for the Mars One Mission, one of the three organizations planning Martian colonies that I examine in this chapter, attribute their interest in space exploration to a narrative medium, such as movies or books (“Meet the Mars 100”). But if novels are to help people learn to experience themselves as a species and respond to humanity’s role as a biogeophysical force, they must find a way to portray humans as the powerful ecosystemic actants we now know them to be.

It is only recently that the scope of human impact on planetary systems has become apparent, and a contemporary literary genre is needed to communicate such grandiose consequences. Hari Kunzru’s 2011 novel *Gods without Men* is an ideal case study of what I have termed the locus-colonial novel: a novel that decenters the human, situating place at the fulcrum of a work of historical fiction, to examine the complex relationships among different human groups and the planetary systems upon which they depend.⁴⁴ By considering the current discourse on proposed colonization efforts on Mars alongside Kunzru’s work, we may begin to see why the locus-colonial novel is a critical interlocutor in the effort to improve human/planetary relationships and, consequently, diminish one of the major drivers of diaspora.

At the opening of *Gods without Men*, Kunzru builds upon the tradition of the

⁴⁴ The locus-colonial novel refers to literature that employs a critical rhetorical technique, rather than a proper genre unto itself. Annie Proulx’s recent novel *Barkskins*, which follows generations of two connected families across the world in search of valuable lumber, is another apt example of the locus-colonial novel. Although *Barkskins* changes place, its status as a locus-colonial novel is cemented by the way the landscape, and the trees on it, drive the novel’s action. Similarly *Here*, Richard McGuire’s 2014 graphic novel, recounts hundreds of thousands of years of world history from the precise geographic coordinates of a single room. The locus-colonial novel telescopes out over immense periods of time – far too vast to be beholden to any one character or group of characters – in order to make visible widespread patterns of exploitation and destruction.

creation myth, appropriating the American Indian trickster God Coyote. In “the time when the animals were men,” Coyote sets out into the desert, marveling at the pristine environment even while he begins cooking methamphetamines. His hamfisted efforts lead to an explosion, the dissemination of poison gas, a fire, and ultimately the creation of “a hundred grams of pure crystal” (*Gods* 5). Coyote’s response to the social and environmental pollution wrought by his actions is particularly striking: seeing his destructive impact on the desert, Coyote simply walks away. Coyote abandons a multitude of anthropomorphic animals, all of whom have tried to help him, to either leave the devastated landscape or attempt to fix it themselves. His implied plan is to sell the drug, regardless of how it impacts the communities he passes through. The penultimate line of the story emphasizes the absence of any efforts at remediation. It reads simply: “And Coyote left that place” (*Gods* 5). Although Coyote is not human, his behavior here is unmistakably humanoid, and this opening is particularly apropos considering that the rest of the novel focuses on the ways in which human actants wreak havoc on the non-human environment.

The plot of Kunzru’s novel is not an easy one to describe: myriad substories revolve around a three-pinnacled rock formation in the Mojave Desert, and the chapters jump point of view, era, and place with little warning. Adaptations of American Indian mythology weave among accounts of the “civilizing” mission of an Aragonese friar in 1775; a Mormon prospector in 1871; a World War I veteran turned linguist studying the Chemehuevi people in 1920; and World War II veteran who lays the groundwork for a U.F.O. cult beginning in 1947. Most of the novel’s action takes place in 2008: on a vacation to the pinnacles a young autistic boy, Raj Matharu, vanishes, throwing his

parents' lives into disarray. Multiple characters are implicated in his disappearance and convene for his search, including a family of Iraqi refugees and a British rockstar. The human characters and their trajectories are all left unresolved, serving as a relational tether to draw readers into what is, for all intents and purposes, the biography of a geological feature. Although all the narrative arcs of *Gods without Men* work in concert to depict humanity's destructive feedback loops, I focus particularly on the storyline of the Ashtar Galactic Command, a U.F.O. cult dedicated to healing the earth of its human-caused woes, and various "saucer people" from multiple periods in the cult's history.

Gods without Men is so potent, in part, because it maps how past human actions created Earth's present, then follows that trajectory into an interplanetary future. The dream of interplanetary colonization is a conspicuous backdrop to Kunzru's study of Earth: the motif of space, embodied by the Ashtar Galactic Command's preoccupation with planetary evacuation, is echoed by subtler space-themed metaphors, diction, and observations woven through every chapter. The novel's juxtaposition of dreams of migration to outer space against the narratives of people who have migrated to the rocks models how migration, both on Earth and beyond, ultimately does little to resolve social and environmental tensions. Reviewing the novel for *The New York Times*, Douglas Coupland assures readers that references to aliens, while present in the text, are unobtrusive. Describing the subplot of the U.F.O cult, Coupland writes: "I know, whenever I hear 'U.F.O.' I start making mental grocery lists, but Kunzru wisely keeps the extraterrestrial hokum to a minimum." Coupland's attempted defense of Kunzru is, however, misguided: *Gods without Men* is a book that fixates upon the lives of aliens, both the possibility of beings from outer space and alienated Earthlings who find

themselves displaced on their own planet. In *Gods without Men*, seeds sown in the past bear bitter fruit in the present, and the specter of the future serves to remind readers of the high stakes of changing humanity's destructive patterns.

Kunzru's fixation with inescapable patterns of destructive behavior is succinctly distilled in his depiction of a mechanic known only as Schmidt. Schmidt recounts a troubled past: a history of colonial occupation, guilt, and migration that seems inescapable. This underlying structure repeats itself three times in the mere nine pages dedicated to Schmidt. Schmidt recalls fathering a son with a "half-blood native" girl named Lizzie who "was all of fourteen years old" to his 17 (*Gods* 10). Lizzie herself is a reminder of the colonial history of the United States, born in Bristol Bay, Alaska to a white man whose reputation was "worth more to him than his half-breed daughter" (*Gods* 11). Schmidt's lust for Lizzie may well be couched in Anne McClintock's argument that "Women are the earth that is to be discovered, entered, named, inseminated, and, above all, owned," but once Lizzie has been acquired, Schmidt finds himself no longer interested in cultivating her (*Gods* 31). Schmidt's relationship with Lizzie becomes abusive for reasons he can't entirely articulate even to himself, and after almost killing her by dragging her behind his truck, Schmidt flees their home, wracked with guilt and dedicated to finding a way to "get back right with the world" (*Gods* 11). Schmidt's reinvention, however, involves an act of significantly greater colonial magnitude. In an attempt to "be judged not as a monster but as a bringer of light, a good man" Schmidt becomes an airline mechanic to aid in the World War II effort (*Gods* 12). But Schmidt's efforts backfire: after working on the *Enola Gay*, Schmidt discovers the monstrosity of atomic power, devastated by his complicity in the Hiroshima bombing. Schmidt is

appalled that “The spiritual promise of energy had been perverted; Instead of abolishing poverty and hunger, atomic power would turn the planet into a wasteland” (*Gods* 14). As after his abusive relationship with Lizzie, Schmidt again seeks to reinvent himself through relocation, this time to the pinnacles that are the focus of the novel.

Schmidt arrives at the pinnacles in 1947: they’ve only recently been privatized, and Schmidt has acquired them cheaply (*Gods* 6). Kunzru reveals that for the indigenous people of the region, the rocks are sacred, and Yucca Woman lives in a cave beneath them weaving together “this world and the Land of the Dead” (*Gods* 122). The original inhabitants, who are connected to the land and who have observed its natural rhythms, tread lightly. The pinnacles seem sacred to Schmidt, too, and he becomes convinced that they can be used to contact aliens. Schmidt describes the pinnacles as land “people hadn’t fooled with,” land “that let you alone,” and land that seemed to have a life of its own, its three pillars resembling “the tentacles of some ancient creature, weathered feelers probing the sky” (*Gods* 6). Despite his admiration of the landscape, however, Schmidt immediately goes about developing his territory. He adds an airstrip, a gas tank, and a cinder block shelter (*Gods* 7). Before he can begin to understand the complex ecosystem of the desert, Schmidt has altered it. Moreover, Schmidt reifies his position as a colonial force by violently banishing the indigenous inhabitants from visiting their sacred territory (*Gods* 8). Schmidt, in his own words, wants to be loving and penitent – he even puts a sign reading “WELCOME,” meant to benefit both terrestrial and extraterrestrial pilots – but his clashes with the indigenous population reveal how entrenched he is in colonial ideology. He is unable to appreciate the cultural and environmental damage wrought by his occupation of sacred indigenous land.

Schmidt's narrative arc explicates the ways in which the attitude that allows for the plunder of the non-human environment drives the marginalization of vulnerable populations as well. As Helen Tiffin notes, "human slavery and environmental damage are connected because human – and, more specifically, Western – exploitation of other peoples is inseparable from attitudes and practices in relation to *other species* and the extra-human environment generally" (Tiffin xii). If environmental and social exploitation stem from the same root, any attempt to address the underlying causes of such problems must consider both issues. Kunzru interweaves his consideration of Schmidt's exploitation of the land with his disrespect for vulnerable populations.

Schmidt's story showcases the immediate violence wrought by the settler colonial mindset, but the format of the locus-colonial novel allows Kunzru to simultaneously consider the long-term consequences of settler colonialism in the region. Schmidt's cultural thoughtlessness and territorial occupation are relatively unsurprising: he is a white male living in the U.S. in mid-20th century, and both history and the novel itself establish his legal right to treat his property however he sees fit. Schmidt founds the Ashtar Galactic Command on the land he has cleared of Native Americans, and the cult develops a complex mythology involving benevolent aliens and careful terrestrial stewardship. After Schmidt's death, it seems as if the collective will move beyond Schmidt's personal prejudices. The collective is explicitly dedicated to equality, and stands in direct opposition to the patriarchal townsfolk nearby. That the members of the cult ultimately perpetuate his patterns of interrelated oppressions, despite their best intentions, suggests that communities founded on ecological and social violence cannot escape the tenets of their origins.

As the novel refocuses on the Command, a portrait comes into focus of well-meaning Lightworkers trying, and failing, to atone for their colonial history. By 1969 Schmidt's disciples, contextualized against the backdrop of the Vietnam War, have made it their mission to purge the earth of negative energy, particularly that which comes from environmental pollution and military occupation. Members of the command, known as Lightworkers, are tasked with trying to enlighten other Earthlings about the errors of their ways, but are promised planetary evacuation if their efforts fail (*Gods* 166). As the novel charts the cult's development, Kunzru reveals the ways in which the Lightworkers, too, are complicit in the destructive behaviors they condemn. Dawn Koenig, a cult-member who narrates the chapters about the Command, notes that of all of the sources of negative energy, the Lightworkers believe that:

the H-bomb was the worst. Not just because it was nuclear. Because it used hydrogen. Splitting hydrogen atoms threatened the life force. It was in air and water, part of the Earth's very soul. Also, the burning of hydrocarbons such as coal and oil [...] was combining with the modern-day projections of human negativity to produce smog, which lay over big cities and made it hard for Lightworkers to signal the fleets. That was one reason the Earth base was located in the desert. Pollution. (*Gods* 156)

The narrative of peace, protection, and equality lures Dawn to the cult at the pinnacles, but as time progresses she is forced to acknowledge that the Lightworkers have an exploitative power structure all of their own – one that subjugates both vulnerable people and the environment. As the townspeople begin to stage raids against the Command, the saucer people change their mantra from one of love to one of “Armed love” (*Gods* 261).

Lightworkers walk around singing rebel songs and carrying rifles (*Gods* 260-61). Dawn leaves the Command when the cult members turn on each other, shooting a young member whose mantra, of breaking down the model of settler colonialism by becoming an “unsettler,” seems as much doomed by the nature of his demise as its fact (*Gods* 262). Looking down at the Command’s Earth base, rusty and dull, burned and covered in the detritus of broken bottles, Dawn realizes that fleets of alien space ships will never come to evacuate the cult members. The earth is irradiated, polluted, and spoiled by conflict, and the members of the command are as much to blame as anyone else (*Gods* 260). Even the Lightworkers do not deserve a new planet to ravage.

The locus-colonial novel is uniquely well equipped to emphasize how certain patterns of exploitation and destruction are nearly universal because the locus-colonial novel is not beholden to any one group of characters. In *Gods without Men*, Kunzru is able to zoom in on the pinnacles, and the people who have visited them, at any moment in time. By examining the pinnacles through such deep time, it is possible to see how every human group who has visited the rocks has used the land and other people for their own personal gains. Moreover, as the majority of the vignettes in *Gods without Men* simply cut off, rather than conclude, Kunzru shows the ways in which such cycles of human (mis)behavior are repeated ad infinitum. The locus-colonial novel telescopes out, making such patterns visible to readers in the hope that visibility and awareness might lead to change.

Gods without Men is rife with representations of settlers who either fail to make the landscape conform to their needs or who damage it irreparably in the process – a daunting premonition when read in the context of proposed Mars colonization. In the

book's oldest human narrative arc, Kunzru shifts to an epistolary format to capture the exchange between a colonial scout in the New World and "His Excellency Teodoro Francisco de Croix, Caballero de Croix, Comandante General of the Internal Provinces of the North" (*Gods* 37). In the first letter the colonial agent, Juan Arnulfo de Flores y Rojas, describes the present-day American Southwest in terms often reserved for inhospitable planets. He writes that "the air is alkaline and constipating, and all who come here suffer from chills and fevers" (*Gods* 37). Despite this significant obstacle, Flores y Rojas lauds a local clergyman, Fray Garcés, "for he has, through faith and determination, transformed a wild and desolate place into a tolerable home for himself and his flock" (*Gods* 38). Garcés has essentially terraformed an alien landscape, which Flores y Rojas initially sees as satisfactory for "the requirements for new settlements" (*Gods* 37). His early correspondence with the home country gives every indication that Spain should send more colonists.

Despite this conclusion, Flores y Rojas describes a land that has, for all intents and purposes, been dramatically changed in a way that benefits neither the colonizer nor the colonized. The Pima and Papago converts who live at Garcés' mission are "much afflicted with sickness and lassitude" and "produce many stillbirths, and neophytes of both genders tend to wither and die without obvious cause" (*Gods* 41). As Garcés conjectures, the converts fail to thrive not because of any particular ailment, but because "to take them out of their own *renchería* deprives them of some subtle vapor necessary to their life" (*Gods* 41). Flores y Rojas describes a number of physical punishments bestowed upon the Native peoples, including hobbling for petty crimes, and unsanctioned punishments, such as soldiers committing "bestial" crimes against the Native women

(*Gods* 41). Of predictably greater concern to Flores y Rojas is the unsuitable lifestyle foisted upon the Spanish soldiers who work to settle the area. The buildings of the mission are in need of repair, and the soldiers who guard the mission are “without wives”: while they are described as “good Christians, on the whole,” the suggestion of sexual violence against the converts undergirds the chapter (*Gods* 39). If this temptation threatens their souls, the lack of food and water easily accessible from the mission threatens their bodily wellbeing. In attempting to make the region palatable to Spanish colonists, it has instead been rendered inhospitable for both the Spanish and the indigenous peoples.

As the text of the novel follows the landscape for centuries, it is revealed to be as toxic in 2009 as it was in 1778, when Flores y Rojas first set out to investigate. The spires awe all of Kunzru’s characters, yet for all their admiration of the region, each group fails to form a mutually sustainable relationship with the environment. For Jaz and Lisa Matharu, the spires are the location of the disappearance of their autistic son, Raj. When Raj is eventually found he is dramatically and inexplicably changed, transformed into a child better able to interact with the world around him. Nevertheless, the Matharus’ marital problems, long blamed on Raj’s condition, continue to escalate. The family travels back to the spires, hoping to find some answers regarding Raj’s reinvention, only to discover that the mystery must be left unresolved: the spires are nothing more than a “vast emptiness, an absence” (*Gods* 366). Kunzru’s characters are pushed to migrate by social and environmental devastation, but their geographical relocation is incapable of resolving their problems. Instead, the novel concludes with the spires being rendered off limits for reasons that are left ambiguous. A police officer suggests that a “serious

incident,” perhaps an explosion or “some kind of chemical release,” has rendered the rocks unsafe (*Gods* 365). Seeking to escape their conflicts, human beings have instead transported them, devastating the land to which they’ve traveled.

Where the pinnacles are the locus of migration for the characters of *Gods without Men*, the ways in which humans attempt to replicate the environmental conditions with which they are familiar is its driver. In a plot that follows David Deighton, a decorated World War I veteran, readers find an echo of the ways in which the Spanish colonizers sabotaged the local ecosystem by attempting to “improve” upon local conditions by making them more familiar, if not better. Deighton travels to the Mojave on a government grant to study the indigenous people, but in actuality to recover from his battle wounds (*Gods* 211). While there, Deighton finds he cannot leave the war entirely behind. Deighton’s wife leaves him for an American Indian man who has informed their research, and Deighton’s jealousy drives him to initiate a superficially disguised revenge killing. Deighton collects a posse, and as they close in on their prey, he finds himself disoriented, convinced he’s back in Germany: “Up in the sky a pale eye looked down on him. God’s German eye. That was not where he was. Why had he thought so? That was not where he was at all” (*Gods* 231). In the Mojave, Deighton has recreated the conditions of Germany so closely that he himself can no longer differentiate between the markedly different locales. What is particularly notable about Deighton’s arc is that he has no aspersions that the environmental conditions of World War I were hospitable — his memories of the war are almost entirely hostile — and yet he is incapable of living harmoniously in a new locale without importing the tragedy of his past.

Kunzru addresses the human instinct to replicate environmental conditions more

directly with his characterization of Laila, a teenage girl from Iraq. Her father, a professor of history, is first captured and tortured by American troops, then taken and murdered by unknown forces, left on the side of the road on a garbage heap (*Gods* 277). Haunted by his death, Laila and her brother Samir are sent to America to live with their uncle to escape the violence and death of the war. Laila's uncle, however, is a true American patriot – perhaps, Laila speculates, because he expatriated before Desert Storm – and he takes it as his civic duty to help the U.S. military recruits better prepare for their tours in Iraq (*Gods* 268). Laila is recruited to join her uncle as a “noncombatant role-player,” populating a simulacrum of an Iraqi village, Wadi al-Hamam, on a desert military base (*Gods* 279). The village, based on a once-top-secret military base that worked to prepare American troops to acclimate to their roles in Iraq, disorients Laila entirely (*Full Battle Rattle*). Laila is prepared to be uncomfortable around soldiers, but she is unprepared for how the village will make her “feel as if she were actually back in Iraq” (*Gods* 272). Moreover, the façade is in no way comforting, but instead reminds Laila exclusively of the horrifying image of her murdered and mutilated father: “She tried to make the picture cute, to add a soundtrack of passionate guitars and surround it with pretty bleeding hearts and flowers and color the scene in romantic black and white, but still Baba lay there, broken and dead” (*Gods* 272). Despite moving nearly to the other side of the world, Laila is unable to escape the military-industrial complex that has taken over her homeland.

There are currently three major entities poised to make a legitimate play at landing humans on Mars within the next few decades, and all of them, like the Lightworkers, Garcés, Deighton, and Laila, seem to imagine that a fresh start in a new territory might bring salvation. NASA plans a manned mission to Mars in the 2030s;

SpaceX, headed by Elon Musk, intends to establish a settlement on Mars in the year 2024; and the not-for-profit foundation Mars One proposes to begin the development of a human settlement on Mars by 2031 (Daines; “Making Life Multiplanetary”; “Roadmap”).⁴⁵ While the threat of climate change looms large and many scientists believe we are entering a new, anthropogenically driven mass extinction event, the odds of Earth remaining habitable for this generation and the next are relatively high (particularly for the wealthiest members of society).⁴⁶ But with any number of threats to Earth’s viability to support human life on the horizon, the urge to colonize other planets is not a matter of saving people, but of preserving humanity; it implies anxiety that Earth

⁴⁵ Whether or not a colony on Mars is plausible remains the subject of much debate. NASA has avoided discussing colonizing the red planet, keeping their ambitions to an exploratory manned mission. SpaceX is largely viewed as credible, particularly because they have done a great deal of contract work with NASA and other government-backed organizations, have a record of safe space flight, and appear to have a realistic plan to secure the funding for the establishment of a colony on Mars. Mars One is the undeniable underdog in the race for colonization for myriad reasons. Despite having a respectable board of advisors listed on their website, experts have been saying for years that they simply do not have the scientific know-how to sustain life on Mars. In 2014, a team of MIT researchers assessed the Mars One team’s technical specifications and determined that, among other flaws, colonists within the proposed habitats would begin to suffocate within 68 days (Do et al. 10). In an attempt to regain some credibility, Mars One CEO Bas Lansdorp agreed to debate two of the scientists who produced the study, only to be widely criticized after for avoiding technical questions by discussing the “dream” of Mars colonization (Sim; Day). Most recently, Rae Paoletta released a damning piece of investigative journalism alleging that Mars One is “in serious financial and strategic crisis,” has fabricated contracts with Lockheed Martin and SpaceX to handle their aerospace needs, and that Mars One is financially insolvent. In one particularly incriminating quote from Brent Bos, a senior research physicist at NASA’s Goddard Space Flight Center and former Mars One candidate who advanced through the second round of selection and chose to leave after becoming disillusioned with the company’s apparent incompetence, said “Instead of just saying ‘OK we can’t do it,’ they faked it. And that’s what they’re doing going forward” (qtd. Paoletta). I have included my analysis about Mars One not only because they still claim to be pushing forth with their colonization plans, but also because they have such a wide public reach, and are arguably the most globally visible organization discussing colonizing Mars. Perhaps because of widespread media attention, Mars One has a massive public following, boasting 183,000 Facebook followers, 92,000 Twitter followers, and Mars One claims that 200,000 candidates paid \$40 each to apply to their initial round of astronaut selection (Paoletta). Because of this reach, their colonial rhetoric is perhaps even more important than that of organizations who may more credibly aspire to land the first humans on Martian soil.

⁴⁶ For a more thorough examination of the role of humans in this ongoing mass extinction event, please see Elizabeth Kolbert’s *The Sixth Extinction: An Unnatural History*.

will not remain a habitable planet indefinitely. For each new planet with a self-sustaining human population, the odds of species survival increase exponentially.

Describing the motivation to situate humans on Mars, NASA, SpaceX, and Mars One conspicuously skirt the issue of the devastation wrought by environmental degradation and climate change. NASA's official materials regarding their journey to Mars simply suggest that it's all in the spirit of discovery: "Its formation and evolution are comparable to Earth, helping us learn more about our own planet's history and future" (Daines). Musk has suggested that humans need to become interplanetary because it is an evolutionary imperative (Musk). The official Mars One materials state that human beings should travel to Mars for the sake of "progress" ("Why Should We Go?"). Notably, none of the materials directly link plans for mass human migration to climatological issues, leaving narrative lacunae which make it possible for readers to imagine that leaving Earth will automatically render climate change a non-issue.

The dearth of official statements linking terrestrial climate issues to Mars missions is both surprising and troubling, considering that all three organizations are embroiled in environmental activism in other aspects of their work. NASA hosts a public webpage on the causes of climate change, acknowledging that most climate scientists agree that climate change is the result of human behavior ("Scientific Consensus"). Musk, whose other business ventures Tesla Motors Inc. and SolarCity focus on alternative energy and sustainability issues, has publicly said that if governments continue to rely on fossil fuels then humanity may face consequences of "more displacement and destruction than all the wars of history combined" (Thompson). Mars One CEO Bas Lansdorp founded Mars One with funds from the sale of his wind energy

company Ampyx Power (Paoletta). The Mars One website maintains that the mission “can greatly improve...sustainability efforts on Earth,” gesturing toward recycling systems and solar panel technology (“Will the Mission”). Specific Mars One astronaut application materials make similar claims. In his application video, candidate Daniel Carey says: “I want to learn firsthand what it takes to construct a sustainable environment...I want to contribute directly to mankind’s confident expansion into the solar system, which we have to do if we’re going to survive in the long-term.” The people involved with NASA, SpaceX, and Mars One clearly identify climate change and environmental degradation as a threat to Earth’s habitability, and they admit to humanity’s complicity in such issues. Nevertheless, they have neglected to voice such truths in the conversation about interplanetary colonization, increasing the likelihood that the same patterns that are bringing about environmental calamity on Earth will be repeated if colonization plans come to fruition.

The implications of Mars colonization narratives that ignore environmental issues on Earth are already becoming evident: current plans for settling Mars all depend upon intentional climate change, and many proposed models seem destined to replicate the same scenarios that are currently threatening ecosystems on Earth. Mars is by far the most hospitable planet in nearby space. Although Mars is, on average, significantly colder than Earth and experiences much more radiation from the sun, it also boasts water in the form of ice, 38% of Earth’s gravity, and a Martian day (known as a sol) lasts for 24.5 hours, which could translate into decent conditions for Earth flora (Urban 2). Despite these similarities, Mars is not currently capable of supporting human life: every mission to settle Mars is contingent upon the intentional reconfiguration of planetary

conditions, the likes of which have never taken place on Earth, even in the midst of the most aggressive imperial campaigns. To colonize Mars is to terraform it.

All proposed efforts to colonize Mars depend upon dramatic ecosystemic shifts, and any consideration of pre-existing planetary processes is missing from the discourse. According to Tim Urban, “in theory, with enough effort and technology, humans could *terraform* Mars and sometime down the road have a somewhat pleasant planet to live on, with trees and oceans and no need to wear a spacesuit outside” (Urban 2). T-shirts available for sale from the Mars One webshop, which you can see in figure three, hint at the after-effects of terraforming, depicting a rocket’s base blasting off from a rocky blue landscape (Saetre). The rocket’s nose, against the red sky of Mars, morphs into a flowering tree that feeds a hovering hummingbird. In the narrative that Mars One constructs through its merchandising, Mars is a warm and fruitful planet replete with flora and fauna, while the Earth left behind is cold and barren. Despite Mars One’s misleading imagery, there will be no such environment waiting on Mars without major human intervention. Mars is not a Goldilocks planet, but with enough resources and effort it could, perhaps, be converted into something suitable for human habitation.



Fig. 3: An image of a t-shirt available for sale at the Mars One webshop.

The trouble with terraforming is not that it will make Mars uninhabitable, but that it makes great changes to planetary systems without understanding them. We might again look to Earth's colonial history to understand some of the repercussions of such a strategy, albeit on a much smaller scale. Some experts, most notably Richard Grove, have lauded the ways in which imperial interference changed the ecosystems of colonial outposts, but the vast majority of postcolonial ecocritics see things differently. As Ruth Blair contends, it is not the introduction of foreign species and displacement of endemic

ones that is itself the problem: it is the inability of colonial settlers, alienated from the land, to recognize the importance of ecosystemic relationships (Blair 100). The vast majority of historical environmental devastation has been done unwittingly. Just as European settlers to the Pacific Islands replaced resilient polycultural systems of agriculture with fragile monocultures in an effort to introduce useful plants, so too aspirational Martians may inadvertently savage critical planetary networks before even knowing they exist (Blair 99).

The plans for terraforming Mars are both massive in scope and, seemingly, irreversible. For terraforming advocates, the end goal is virtual planetary replication. Terraforming advocates are currently brainstorming ways to catalyze a greenhouse effect on Mars, and the general consensus is that a temperature increase of only seven degrees Fahrenheit is adequate to release water from the polar ice caps of Mars (Urban 2). Robert Zubrin, President of both the Mars Society and Pioneer Astronautics, notes that “it will be possible for humans to substantially thicken Mars’s atmosphere by forcing the regolith to outgas its contents through a deliberate programme of artificially induced global warming” (“Colonising the Red Planet” 53).⁴⁷ The way to achieve this global warming on Mars is still the subject of some debate, but plans generally involve deliberately converting elements on Mars into greenhouse gases like methane, chlorofluorocarbons,

⁴⁷ Zubrin’s advocacy of terraforming Mars through a deliberately catalyzed greenhouse effect is perhaps unsurprising given his well-documented defense of anthropogenically motivated climate change on Earth. Not a climate change denier, Zubrin has instead argued that the benefits of climate change, and the society that depends upon behaviors that contribute to climate change, outweigh any consequences. In a recent review of Roger Scruton’s *How to Think Seriously About the Planet: The Case for an Environmental Conservatism*, Zubrin dismisses any concern that climate change might disproportionately impact the developing world, writing: “As a matter of scientific fact, warming lengthens the growing season and increases rainfall, while increased CO₂ concentrations accelerate plant growth. Yet for Scruton, no demonstration that global warming is on net harmful is required, and the innumerable benefits offered to the underdeveloped sector by Western invention, industry, and medicine are readily ignored” (“This Land is Whose Land?” 82).

and carbon dioxide – the same gases that are presently leading Earth toward uninhabitability – or detonating nuclear weapons. Theoretical physicist Michio Kaku has suggested that nuclear weaponry would be the most cost effective strategy for catalyzing a runaway greenhouse effect on Mars (Jauregui). While less expensive, this strategy has sundry unpredictable consequences. Senior astronomer at the SETI Institute, Dr. Seth Shostak, notes that such a tactic could do untold damage to “still-unknown life on the Red Planet,” not to mention the damage that could be done to life on Earth if a rocket bearing nuclear weapons mislaunched and returned to Earth with its payload intact (Jauregui). The lasting nuclear effects of such a strategy could also adversely impact future human colonists of Mars. Regardless of these risks, it’s a technique Musk has recently and publicly advocated, most notably in an appearance on “The Late Show” (“Scarlett Johansson/Elon Musk/Kendrick Lamar”). And, as Zubrin has noted with Christopher P. McKay of NASA Ames Research Center, while methods for instigating global warming on Mars might currently be prohibitively expensive, “such an operation is hardly likely to be beyond the capabilities of the mid 21st Century” (“Technological” 11). Proposals to terraform Mars and plunder the resources to be found in space seem to suggest that before even reaching the red planet, potential human colonists harbor little concern about the ways in which their presence might damage pre-existing ecosystemic relationships.

It seems likely that other environmentally devastating practices will be exported to Mars as well. Attempting to answer the question about whether or not the mission will harm the Martian environment, the Mars One materials avoid discussion of intentional ecological tampering like resource extraction and terraforming, instead focusing on

mainstream environmental buzzwords. They note that the scarcity of resources on Mars will force the colonists to be frugal, recycle everything, and use solar energy, concluding that “Mars residents will have a much smaller ecological footprint than that of the average person on Earth” (“Will the Mission”). They go on to assert that the publicity of the ascetic Martian lifestyle will encourage people to behave more sustainably on Earth, boost the profile of the recycling industry, and increase the availability of lightweight solar panel technology. These claims ignore the resources required for transporting the colonists to Mars and building the infrastructure necessary for their habitation, instead focusing on the conventional bandages that are already being applied, inadequately, to the systemic consumptive drive behind terrestrial climate change. Although the proposal assures readers that unspecified precautions will be taken to protect the environment of the red planet, plans for extracting resources from the ground and atmosphere are part of the Mars One mission statement (“Mission Feasibility”).

Recent legislation designed to protect corporate interests in space do nothing to quell concerns about environmentally destructive practices being exported to Mars and other extraterrestrial locals. Mining in space is so close to becoming reality that the U.S. government has begun to legislate official policies. H.R. 2262, colloquially known as the SPACE Act, became law on November 25, 2015, and includes provisions for private companies to protect any resources they extract from asteroids for private profit with limited government interference (United States, 114th Congress). The bill’s passage indicates that commercial space resource extraction is plausible enough to warrant legislation and lobbyists. Moreover, as space doesn’t have the benefit of even the modest environmental protections governing Earth, such legislation sets a dangerous precedent

for how similar projects might be handled on colonized planets.

Similarly, it seems possible that global militaries are also moving forward with plans to begin military operations in space, which also carry grave environmental repercussions. In a speech to a group of Marines and journalists at Marine Corps Air Station Miramar, in San Diego, on March 13, 2018, U.S. President Donald Trump commented on the need for a “space force” in relation to plans to send humans to Mars:

You wouldn’t have been going to Mars if my opponent had won, that I can tell ya. You wouldn’t even be thinking about it... My new national strategy for space recognizes that space is a war-fighting domain, just like the land, air, and sea. We may even have a space force, develop another one, space force, we have the air force, we’ll have the space force, we have the army, the navy... So think of that, space force! Because we’re spending a lot and we have a lot of private money coming in... tremendous. (CBS News)

Although it was initially unclear if Trump was sincere about his call to designate a specific branch of the military to oversee extraterrestrial issues, defense officials have since corroborated Trump’s remarks. Kenneth Rapuano, assistant secretary of defense for homeland defense and global security, testified at a hearing of the House Armed Services subcommittee on strategic forces that the Trump administration is studying the reorganization of the military’s space component and that Trump himself “has prioritized space. He recognized the threats that have evolved, and the pace at which they evolve. He’s very interested in exploring any options that can provide enhanced capabilities” (Erwin). The impact of armed conflict and military exercises has been increasingly well documented in recent years. In his recent consideration of airpower and the environment,

Joel Hayward noted that air forces boast higher carbon footprints than armies or navies during both peacetime and war, and that their distance from targets and necessary use of devastating ordnance often leads to more serious incidences of collateral environmental damage than other military branches (ix-x). It stands to reason that a space force may encounter many of the same problems.

As humans have yet to find evidence of extraterrestrial life, it may seem as though such environmental interventions away from Earth have few, if any, adverse consequences. Without evidence of life beyond Earth, and pending any detailed information regarding the ecosystemic conditions of Mars, it seems as though any critique of colonial practices on Mars should focus on the potential impact to human populations. Perhaps, then, it is enough to note that the effort and resources put toward making Mars suitable for human habitation will be all for naught if humans are unable to identify and curb the underlying socioeconomic traits that lead to the devastation of planetary systems. Planetary redundancy has yet to happen for one very obvious reason: there are no nearby planets that can comfortably sustain human life without major intervention. The search for a so-called “Goldilocks Planet,” a planet that is the appropriate distance from its star to produce liquid water and therefore the potential to host life, is ongoing and is the constant fodder of NASA press releases. Even if one were discovered, however, the technology to reach such a planet is beyond the reach of current generations. If humans manage to colonize Mars, it is necessary to protect it, as planets suitable and available for human colonization are in short order. If humans colonize new planets only to exhaust them, humanity is setting itself up for an endless chain of diasporas, each leading us further away from Earth. If humans manage to colonize Mars

but fail to learn from the history of their environmentally destructive practices, ever more dramatic human displacement will become the status quo.

Moreover, plans for colonizing Mars also threaten to replicate the social hierarchies that have been born of the colonial process. Candidates will almost certainly bring their prejudices with them to Mars. The SpaceX model for Mars colonization depends upon extreme personal wealth, as the goal price for a seat onboard is \$500,000 (Urban 4). Musk has also proposed that the initial transport ships to Mars will feature a clearly delineated class system. Describing how to make the trip to Mars affordable for consumers, Elon Musk has written that “we could subsidize the equivalent of economy by charging a lot more for first class,” creating a group of original Martian settlers who begin their new lives from a site of particular privilege (qtd. Urban 4). Although Mars One has sought to cultivate a more diverse pool of candidates, seeking applications from all countries, this strategy has also fomented patriotic hype that threatens to perpetuate national resentments. On the Mars One community website, candidates are searchable by country, and publicity junkets make much of the number of candidates still in the running from, particularly, developing nations. Nevertheless, the official language of the program is English, a hallmark of wealth and education in many countries worldwide, which calls the equalizing aim of the mission into question. NASA’s candidates for a Mars mission must all be American citizens with, at minimum, “a bachelor’s degree from an accredited institution in engineering, biological science, physical science or mathematics. An advanced degree is desirable” (Northon). From a logistical standpoint high personal cost, a common language, and the expertise necessary to undertake a successful space mission all make sense, but they also threaten to construct a rather homogenous population on

Mars. The financial and educational barriers to traveling to Mars essentially guarantee that the people who develop its social mores will do so from a sight of privilege and prestige.

If we accept that climate change is the result of human behavior, that climate change poses a real threat to the planetary relationships necessary to support life on Earth, and that current plans to colonize Mars threaten to export the destructive human behaviors that lead to climate change and social inequity on Earth, then it seems as though it should be easy to disrupt our socially and ecologically destructive patterns. Of course, as Kunzru models in his consideration of Schmidt and the Ashtar Galactic Command, disrupting colonial ideology is always more difficult than it seems. According to Chakrabarty, humans may not even be capable of the kind of self-awareness necessary to slough off our exploitative ways. He writes:

Climate change is an unintended consequence of human actions and shows, only through scientific analysis, the effects of our actions as a species. Species may indeed be the name of a placeholder for an emergent, new universal history of humans that flashes up in the moment of the danger that is climate change. But we can never *understand* this universal. ... climate change poses for us a question of a human collectivity, an us, pointing to a figure of the universal that escapes our capacity to experience the world. (221-2)

Chakrabarty contends that because climate change is the result of collective human action, we must be able to view ourselves as a species at large if we are to fully comprehend its magnitude. Therefore his assertion that “we can never *understand* this universal” is particularly ominous (221-2). He goes on to emphasize that this universal

identity is even more complex, for it must not “subsume particularities,” and ignore that some humans are more responsible for climate change than others (222). Alarming, Chakrabarty does not seem to believe that the human mind is capable of the acrobatics necessary for humans to accept their role in perpetuating climate change. Where Chakrabarty leaves off on a somewhat hopeless note, however, I suggest that the locus-colonial novel may step in.

Chakrabarty is primarily a historian, and that may account for some of his skepticism: history, presented as fact, has long been a valuable tool in the perpetuation of colonial ideology. Ania Loomba defines the colonial project as “the conquest and control of other people’s land and goods” (8). According to Edward Said, two central tenets persist across the history of colonialism: “one was the great power’s right to safeguard its distant interests even to the point of military invasion; the second was that lesser powers were also lesser peoples, with lesser rights, morals, claims” (36). For Said, these “lesser peoples” were and are constructed, at least in part, by discourse that elides the perspectives of the colonized (22). In the foundational text, *The Darker Side of the Renaissance: Literacy, Territoriality, and Colonization*, Walter Mignolo notes that colonizers do not simply erase the language and history of the colonized from their historical accounts. Instead, they adapt native history and mythology until the colonizer’s version of reality becomes accepted as fact (5). Mignolo writes:

The politicization of hermeneutics proves to be necessary to account for the colonization of one system by another. Colonization does not imply a devouring march, by which everything in Amerindian cultures was suppressed by Spanish pedagogical, religious, and administrative institutions. I insist, first, on the

coexistence of languages, literacies, memories, and spaces; second, on the dominance that makes it possible for one of the coexisting elements to occupy a position of power over the others as if it were the only truth; and third, on the need of the politicization of hermeneutics to deal with these questions. (4)

The colonizers have written the histories, eliding the ways in which their very colonial practices have altered existing social and planetary systems. When the histories are composed by the powers that be, they rarely showcase the adverse consequences of their actions.

The locus-colonial novel does not purport to be a work of history, but it does strive to present historically informed narratives that ring true. Coupland identifies *Gods without Men* as a foundational text in the new genre of “Translit,” which he describes as novels which “cross history without being historical; they span geography without changing psychic place.” But Coupland’s description of Kunzru’s novel ignores that it is explicitly historical, and each timeline is clearly painstakingly researched. Throughout his career, Kunzru has been known for his exhaustive research into the historical contexts and accounts that shape his novels. In an interview with Frederick Luis Aldama, Kunzru attests to spending six months in the British Library “reading source material” before beginning to write his first novel, *The Impressionist* (12). It’s a trend that has continued throughout Kunzru’s body of work. Nearly every narrative arc within *Gods without Men*, almost all of which describe humans wreaking havoc upon their social and environmental relationships before relocating to evade the aftermath, can be traced to its real-world inspiration: Kunzru’s writing draws from biographies, memoirs, and literary ephemera.⁴⁸

⁴⁸ Kunzru is known for his painstaking historical research, and *Gods without Men* is no exception. The historical influences for *Gods without Men*, including those for many of the substories not analyzed in this

Where “history” is an oppressive tool, however, the locus-colonial novel may begin to present alternative historical stories that better demonstrate the causes and effects of colonialism. The locus-colonial novel is rooted in historical accounts, yet remains free to challenge them. In function, the locus-colonial novel is similar to Ramón Saldivar’s conception of “historical fantasy,” which he identifies as one way to combat the hermeneutic tyranny initiated by settler colonialism. “Historical fantasy,” which is literature that examines history through a fictionalized and fantastical lens, can draw attention to the ways in which historic accounts themselves are often more fiction than fact, and compel “our attention to the gap or deficit between the ideals of redemptive liberal democratic national histories concerning inclusiveness, equality, justice, universal rights, freedom guaranteed by rule of law, and the deeds that have constituted nations and their histories as public collective fantasies” (594). For Saldivar, historical fantasy can present the evidence found in the space between historical narratives – the approximation of truth that can be discerned by sifting through various subjective accounts – to present a pattern that must be broken if humanity is ever to find a truly sustainable cultural model. The primary difference between “historical fantasy” and the locus-colonial novel is

chapter, make for extremely interesting reading. In an interview with *The New Yorker*’s Rollo Romig, Kunzru details the research he did on a real-world U.F.O. cult, also called The Ashtar Galactic Command, to write about the group by the same name in the novel (Romig). In his acknowledgments, Kunzru expresses gratitude to Carobeth Laird, whose linguist-ethnographer ex-husband John Peabody Harrington seems to have served as the inspiration for the character and trajectory of Deighton. Much of the novel pays homage to Laird’s memoir about her doomed marriage and affair with her linguistic informant, *Encounter With an Angry God*, and her extensive work translating Chemehuevi mythology seems the basis of the Coyote tales that populate the text. Kunzru’s acknowledgments attribute sections on Fray Francisco Garcés and the early Spanish colonizers to a real Garcés, who “did travel through Sonora, Arizona, and California in 1775-1776 and wrote about what he found” (*Gods* 371). The history behind the inspiration for Kunzru’s depiction of a simulacrum of an Iraqi village, Wadi al-Hamam, and the experience of a young Iraqi immigrant there can be found in the documentary *Full Battle Rattle*, which details how Iraqi immigrants and refugees are hired to aid the U.S. military by allowing soldiers to practice possible war-time scenarios in ersatz Iraqi villages reconstructed in the desert of the American Southwest. While Kunzru fictionalizes these historical accounts within *Gods without Men*, the book is indebted to a staggering body of historical research.

scope. While Saldivar describes a genre of fiction that is expressly designed to account for racial tensions in a theoretically postracial American landscape, Kunzru's project is significantly more global: it attempts to encapsulate a universal experience (Saldivar 575). Speaking in 2008, Kunzru articulated some of his stated goals as an author by invoking the charter of PEN, an international society of writers for which Kunzru then served as deputy President for the English chapter. Two of the tenets, particularly, speak to Kunzru's mission in *Gods without Men*:

1. Literature knows no frontiers, and should remain a common currency between nations in spite of political or international upheavals. [...]
3. Members of PEN should at all times use what influence they have in favour of good understanding and mutual respect between nations; they pledge themselves to do their utmost to dispel race, class and national hatreds, and to champion the ideal of one humanity living in peace in one world. ("Freedom of Expression" 25-6)

Informed by these stated ideals, *Gods without Men* works to create the impression of "one humanity," even while detailing the ways in which different factions of that humanity have waged war upon each other. In so doing, he has begun to answer Chakrabarty's call to cultivate a "universal" that "cannot subsume particularities" (222). Kunzru has created a document that presents myriad alternative, sometimes contradictory histories of the same place, all designed to showcase how the colonial impulse degrades both human beings and the planet we rely on.

Kunzru's previous works have allowed him to emphasize the human impact of colonialism and the migration and diaspora that follows, but the locus-colonial novel

form affords him the opportunity to incorporate and interrogate the importance of place. In *Territories of Difference: Place, Movements, Life, Redes*, Arturo Escobar suggests that contemporary scholarship has emphasized displacement and migration to the detriment of a consideration of the ways in which place informs today's cultural, economic, and ecological struggles (7). Escobar notes that the dominant theory today "is to state that globalization has rendered place irrelevant, meaningless, or at least secondary in the constitution of places and region" (*Territories* 30). But for Escobar, that leads to dire consequences not only for indigenous inhabitants, but also for the ecosystemic welfare of the region itself (*Territories* 66). While modernity may allow settlers to feel comfortable in an alien landscape, or to develop a sense of spiritual or material ownership over the land, it does not equip them to understand the minutiae of the region with any intimacy. Kunzru seems to echo Escobar's concerns, using *Gods without Men* to reveal the ways in which colonial groups, despite their best intentions, repeatedly fail to form enduring and mutually sustaining relationships with the territory that they occupy. When read in the context of interplanetary colonization, such a claim has grim implications: when every human is disconnected from the planetary landscape, Kunzru suggests that there is little hope for ecosystemic awareness. Kunzru emphasizes the bleak consequences of ill-informed habitation as each new wave of settlers leaves the spires slightly more tarnished than the last.

In *Gods without Men*, Kunzru presents a history of terrestrial colonization that should serve as a pre-colonial warning for aspirational Martians, particularly as current plans for interplanetary colonization, for all their space age panache, adhere closely to conventional colonial models. Kunzru's treatments of the Lightworkers, Garcés,

Deighton, and Laila all depict well-meaning people who are nevertheless incapable of breaking free of their destructive patterns. The Mars mission materials read the same way. One potent example comes in the form of the rocket that would bring colonists to Mars in the first place: a rocket that is currently and for the foreseeable future entirely dependent upon fossil fuels. Musk, whose Tesla Motors engages in research on alternative, more sustainable means of powering both vehicles and homes, has stated that “For rockets to go electric, there would have to be a few Nobel Prizes awarded” (qtd. Urban 4). During launch, the prize rocket developed by SpaceX, the Falcon 9, burns 540 gallons of fuel per second (Urban 4). Despite his desire to move society away from finite fuel resources, Musk recognizes that because space is a vacuum, alternative methods for generating thrust are currently inconceivable. Even if future spacecraft are driven by nuclear technology or as-yet-undiscovered methods of energy production, the human ability to launch anything into orbit depends upon force that can currently only be generated by fuel driven explosions. This poses a logistical conundrum that bears great ideological weight: if space travel is only feasible because of the very petroculture that is largely responsible for anthropogenically motivated climate change, is there any way to view interplanetary colonization as a means to germinate a more conscientious, resource-wise human culture? If the act of settling another planet depends upon the willingness to burn immense quantities of fossil fuels, intentionally to replicate the same environmentally devastating practices that have led to terrestrial climate change, and to extract innumerable resources at great environmental cost, can any successful colonial settlement jettison the consumptive practices that have contributed to Earth’s growing uninhabitability? And, if the answer to the last question is no, do humans deserve

planetary redundancy, knowing that each settlement will be temporary, lasting only so long as local resources support the human population? These are questions that must be tackled in “the safe, manageable dimensions of make-believe” if future colonies have any hope of breaking humanity’s vicious cycle of colonization, exploitation, and devastation (Achebe 170).

Describing contemporary historical novels that consider colonialism and its aftermath, Jed Esty writes that such texts have the potential to detail “an unstable past that holds lessons for an equally unstable present” (154). *Gods without Men*, and the locus-colonial novel more generally, work to show the ways in which the patterns of the past affect not only people, but also planetary systems, in a manner that conventional histories have not. Kunzru presents a compelling argument against interplanetary colonization by depicting how people, alienated from the environments to which they have migrated and unable to leave behind the colonial baggage that has moved them, cannot simply settle on new earth without perpetuating the same destructive practices that led them there. In the face of environmental decimation, however, humans may be forced to choose between extinction and planetary evacuation. As humans prepare to become interplanetary, diaspora theorists may offer a much-needed critical intervention; scholars of terrestrial diasporas are uniquely equipped to prepare the populace for the challenges that face them as they are forced to evacuate their homelands. New moves in diaspora studies can foreground human complicity in making Earth uninhabitable, reminding readers of the risks of allowing history to repeat itself. Literary treatments of colonialism must reveal historical patterns of social injustice and environmental degradation if there is to be any hope for such patterns to be disrupted, and literary theorists must analyze

such texts to reveal the dangerously flawed ideology that too often leads to mass human displacement and migration. Literature has the power to shape the ways in which human beings expand beyond Earth, and as plans are laid and rockets built, the time for historically aware, self-conscious texts is now.

CHAPTER V

FINAL THOUGHTS: *COLONIZE MARS* AND THE LOCUS-COLONIAL NOVEL IN THE DIGITAL AGE

I began this project with a pair of superficially simple questions: Can novels encourage readers to respond meaningfully to climate change and other environmental crises? And, if so, how? As the preceding chapters have shown, the novel is a powerful form that can compel readers to new desires and passions, including more affective and passionate responses to environmental degradation and climate change. However, the novel form, like humanity itself, must adapt if it is to weather the Anthropocene. The mechanisms through which novels can catalyze action in response to climate change are complex, and the most effective novels are thoughtfully engaged in imbricating art and activism. I would like to conclude by offering my own contribution to the field, in the preliminary form of a digital locus-colonial novel that specifically seeks to connect the history of Earth's environmental decimation and the future of human colonial efforts on Mars.

While I believe that locus-colonial novels are one powerful genre capable of helping readers use the relationship between historical patterns of environmental and social exploitation to imagine informed, sustainable, alternative futures, it is important to consider the limitations of the genre, as well. In *The Great Derangement*, Amitav Ghosh advances a convincing argument that one of the characteristics of novels that inhibits their ability to adequately address climate change is limited scope. He argues that the world of the novel is created by boundaries of time and space – they don't take place over eons and epochs, and rarely cover more than a few generations. Their settings generally

become representations of larger milieus, while still remaining specific. Ghosh writes that “It is through the imposition of these boundaries, in time and space, that the world of a novel is created: like the margins of a page, these borders render places into texts, so that they can be read” (*Derangement* 59). Ghosh goes on to describe how narratives have historically been more capable of telescoping out to encapsulate time-spans and space beyond human experience, noting that it is only within the confines of the modern novel that such expansion becomes impossible. Describing a sixteenth-century Chinese folk epic, Ghosh illustrates how it is able to cover, essentially, all of the world’s space and history:

Here is a form of prose narrative, still immensely popular, that ranges widely and freely over vast expanses of time and space. It embraces the inconceivably large almost to the same degree that the novel shuns it. Novels, on the other hand, conjure up worlds that become real precisely because of their finitude and distinctiveness. Within the mansion of serious fiction, no one will speak of how the continents were created; nor will they refer to the passage of thousands of years: connections and events on this scale appear not just unlikely but also absurd within the delimited horizon of a novel—when they intrude, the temptation to lapse into satire, as in Ian McEwan’s *Solar*, becomes almost irresistible.

(*Derangement* 61-2)

In *Gods without Men*, Kunzru attempts to experiment with scope by confining the majority of the novel to an extremely limited geographical space, choosing instead to bring human action from around the world to one specific locale. Although the novel spans centuries, and even employs adapted creation myths to tackle world-building issues

nearly as complex as “how the continents were created,” it is better equipped to do so because it does not also attempt to encompass the world in total. Annie Proulx’s *Barkskins* is another recent example of locus-colonial fiction, but with a geographical scope more ambitious than Kunzru’s. In *Barkskins*, Proulx transports readers across the globe from North America to New Zealand and introduces readers to generations of (de)foresters. The novel suffered for these choices critically.⁴⁹ If the modern novel makes it so challenging to encompass both deep time and expansive geography, it is worth considering whether alternative genres and forms may supplement such texts productively.

In recent discussions of genres and mediums that are well qualified to drive imaginative conceptualizations of sustainable futures, video games have come to the fore, and it seems plausible that a digital, locus-colonial novel with visual components may be even better suited to contend with the issues of climate change and environmental degradation. As discussed in chapter three, Ghosh concludes that the “act of reading itself” will adapt to better engage with climate change and other environmental issues (*Derangement* 84). For Ghosh, this is a response to how the Anthropocene thinks through humans via images, and therefore we must depart from “our accustomed logocentricism”

⁴⁹ Anthony Cummins’ review of *Barkskins* in *The Guardian* is fairly representative of the critical reception of the novel, which tends to laud Proulx’s ambition and historical research while also critiquing a dearth of human connection. Cummins recognizes that the sheer volume of characters, and their comparatively brief lifespans to the forests of the novel, helps to reprioritize the environment in the context of human life, writing:

Of the dozens of characters featured in these pages, many are little more than names, with some introduced only to show how they die. By making everyone so brutally disposable, Proulx invites us to care more about the context than about any individual story: the environment is at least as important as anyone in it, a view held by the book’s indigenous people but rubbished by almost all of its foreigners.

That said, Cummins concludes that “for Proulx to write it to a planetary scale rather than a human one risks ignoring an imperative of any campaign: don’t lose your audience, even – perhaps especially – when you’ve already lost the fight.” Cummins echoes other critics, who viewed the novel as more of an elegy than a call to environmental action, which flouts one of the central goals of effective locus-colonial fiction.

(*Derangement* 83). The potential collaboration between textual narratives, which allow readers to creatively envision certain aspects of climate change and characters, coupled with the immersive experience of video game play, seems like a rich site for climate change communication.

Video games are often perceived as being capable of success in areas in which traditional modes of delivering climate change information falter. Recent studies have critiqued conventional media as a means of climate change communication for encouraging the passive reception of information as opposed to collaborative interaction, for its inability to adequately contextualize the issues of climate change, and with being apocalyptic or nihilistic, leading the audience to feel as if it is already too late to mitigate the adverse effects of climate change.⁵⁰ In contrast, virtual game environments create interactive sites of communication that can lead to enhanced comprehension of environmental issues and climate change. As Aleksandra Dulic, Jeannette Angel, and Stephen Sheppard write in “Designing Futures: Inquiry in Climate Change Communication”:

Virtual environments are well suited for encompassing and correlating complex information, using the power of image, sound and storytelling with computational processes that enable interaction and simulation. The design of stories, sounds, images, visualizations, and computational processes support the communication of a holistic message through interactive experiences. In this context participants experience a deeply meaningful form of engagement through a poetic act that bridges across complex rational and non-rational ways of learning. The creative

⁵⁰ See Roberto Aparici and Marco Silva’s “Pedagogy of Interactivity” and Susanne C. Moser’s “Communicating Climate Change: History, Challenges, Process and Future Directions” for more on this.

nature of a poetic act, embedded in images, sounds, stories, and interactive simulations, has the ability to represent absent things as if they are present and forcefully affect thoughts and feelings. These experiences can lead to the creation of new emotions and insights into possible futures. (58)

Dulic et al. emphasize that the act of co-creating alternative futures in response to the threats of environmental harms is most effective when it is an affective and logical process. Video games, particularly those with a strong focus on art and design, can help to catalyze emotional reactions, a sense of agency, and, consequently, ontological reflexivity.

Although art, imagery, and participation all contribute to the ways in which video games perform well for engaging players in environmental issues, studies suggest that the role of storytelling within gameplay should not be underestimated. In “Analyzing Climate Change Communication Through Online Games: Development and Application of Validated Criteria,” Tania Ouariachi, María Dolores Olvera-Lobo, and José Gutiérrez-Pérez determine that the efficacy of climate change games must be assessed through the lens of narratology and ludology, both.⁵¹ They note that while gameplay, visual, and interactive aspects of video games certainly cultivate more active user engagement, storytelling is nevertheless one of the most effective means of communicating climate change:

Storytelling has been suggested as a key strategy for enhancing attention and engagement: It makes climate impacts and solutions more real, it influences people’s beliefs because they shift the frames of reference for emotional and

⁵¹ In the context of video games, narratologists argue that video games should be analyzed using theories of narrative, as they are primarily a form of narrative expression, not unlike a novel. In contrast, Ludologists advocate for analyzing video games based on their rules, gameworld, and game play (Ouariachi et al. 14).

cognitive processes, and it increases people's capacity for empathy because it can connect with values and social identities. (31)

Ouariachi et al. constructed an elaborate questionnaire to help assess the success of various climate change games, and the narrative section asks many of the same questions we have been asking about novels throughout this dissertation project: what is their geographical and temporal scope? Does the narrative imbricate real and speculative climate change scenarios, and to what ends? But it also contends with an issue that is particularly difficult for novels alone to grapple with: does the story lead to a single, lineal endpoint, multiple possible conclusions, or is it gnoseological, with no clearly defined conclusion? (21). As I have used their questionnaire to inform and influence my conceptualization of a digital locus-colonial novel, I have included it in its entirety in table 1 (Ouariachi et al. 20-23).

If one primary goal of climate change education is to inspire participants to creatively envision alternative futures, and to imagine their part in co-creating those futures, then the endpoint of climate change narratives is particularly important. Certainly, readers and game-players can both continue to think about the narratives and how they might have chosen to end them, but too clearly delineated an ending could foreclose that possibility entirely. I am inclined to agree with Donna Haraway's theory that the vast majority of serious fiction, and the reading norms that surround it, prohibit the type of creative rewriting that encourages readers to most productively imagine creative and alternative conclusions than those offered in the text. In her consideration of the environmental potentials housed within SF, which encompasses not just science fiction but also speculative futures, science fantasy, and speculative fiction, Haraway

contends that the anti-elitist culture built around SF allows readers to more freely

Table 1. Analysis Dimensions and Criteria.

Dimensions	Criteria	Description/categories
Identification	1. Game title	Name of the game
	2. URL	Address on the World Wide Web
	3. Location on the web	The game can be located on an independent website, a section of the producer website, or an external and nonrelated website (e.g., game database)
	4. Name/type of producer	Institution behind the production of the game; categories: national government, regional government, provincial government, local government, private sector, educative institution, communication media, scientific institution, NGO, intergovernmental organizations, partnerships, and other
	5. Availability of an app	Existence of an application for mobile phones or tablets
	6. Free of charge	The game can be free of charge or not
	7. Language/s	Language options available to play the game
	8. Target audience	Main public addressed in the game
	9. Communicative purpose	Communicative intentions of the game; categories: familiarity with the topic, raising awareness of causes and consequences, promote change of attitudes and behavior, and development of solutions and ideas
Narrative	10. Brief description	Summary and overview of the game
	11. Relevance of narrative	Narrative elements can acquire importance or be irrelevant; categories: high, medium, low
	12. Existence of a narrator	The use of a written or spoken commentary to convey a story; categories: yes, no

(continued)

Table 1: Analysis dimensions and criteria for evaluating the efficacy of digital climate change games, republished with permission through Sage Publishing (Ouariachi et al. 20-

Table 1. (continued)

Dimensions	Criteria	Description/categories
Contents	13. Global story line	Story in its entirety, the logical, or causal succession of the events; story structures can be lineal (leading to a single endpoint), multilinear (leading to an indefinite endpoints), or gnoseological (no clearly defined aim)
	14. Character depiction	Characteristics, qualities, and roles of the character/avatar; categories for roles: scientist, politician, entrepreneur, major, superhero, ordinary citizen, farmer, policy maker, other
	15. Representation of the environment	The world in which the character develops
	16. Dimension/space	General context of the scenarios; categories: real, fictitious
	17. Dimension/scale	Scale of the scenarios; categories: global, national, regional, local, combination
	18. Dimension/time	Period in time that the story spans; categories: past, present, future, combination
	19. Term used	Terminology used to describe the phenomenon being studied; categories: climate change, global warming, both, none
	20. Existence of false concepts and misconceptions	Erroneous beliefs that are widely held in relation to climate change (e.g., ozone depletion as a cause); categories: yes, no
	21. Explicit use of scientific concepts	Definition of climate change terms (e.g., greenhouse effect); categories: yes, no
	22. Explicit use of information sources	Sources of information being cited (e.g., source: NASA); categories: yes, no
	23. Convergence with social networks	Links to social networks are included (e.g., Facebook, Twitter); categories: yes, no
		(continued)

Table 1: cont.

Table 1. (continued)		
Dimensions	Criteria	Description/categories
Gameplay	24. Message frame/climate change focus	Main approach to respond to climate change; categories: mitigation, adaptation, both
	25. Message frame/main theme	Main topic being addressed; categories: energy, water, waste management, transport, consumption, biodiversity, urban planning, disaster risks, international negotiations, other
	26. Message frame/promotion of actions	Activities promoted in the game
	27. Message frame/causes	Attribution to the origins of climate change; categories: natural causes, human action, both, not applicable (the game does not mention any cause)
	28. Message frame/consequences	Effects of climate change; categories: glacial melting, desertification and drought, extreme meteorological events, sea-level rise, temperature increase, threat to ecosystems, health problems, political consequences, economic consequences, social consequences, other, not applicable (the game does not mention any consequence)
	29. Message frame/tone	Values and emotions given to the topic; categories: alarmist, sensationalist, informative, uncertainty, protest, hope, proaction, directness, caring, humorous, other
	30. Images	Visual representations
	31. Number of players	How many users can play in a single in the game?
	32. Type of use	The game offers different options to play; categories: individual, multiplayer
		(continued)

Table 1: cont.

Table 1. (continued)

Dimensions	Criteria	Description/categories
33.	Player type	Players' profile depending on their interests; categories: collaborator, exploratory, competitor, creator
34.	Degree of interactivity	User intervention in the content; categories: high, medium, low
35.	Length of playing	Time employed to play the game
36.	Game mission	Key actions to win the game
37.	Game dynamics and mechanics	General structure of the game, elements that enable the player to become immersed; rules and challenges; categories for dynamics: fantasy, challenge, comradeship, discovery, expression, emotions, progression, ability, status, other; categories for mechanics: decision making, opportunities, competition, cooperation, personalization, resource collection, rewards, target shooting, memory retention, calculation, turns, other
38.	Feedback systems	Message that the player receives in light of certain actions; categories: positive, negative, both
39.	Reward system	Actions that incentivize and the rewards themselves; categories: yes, no
40.	Availability of game instructions	The website or game itself offers instructions on how to play; categories: yes, no
41.	Possibility of saving the game	Option to save the game and play another time, categories: yes, no

Table 1: cont.

reconceive of possible endings. She writes:

I wish to exercise the license that is built into the anti-elitist reading conventions of SF popular cultures. SF conventions invite—or at least permit more readily than do the academically propagated, respectful protocols for literature—rewriting as one reads. The books are cheap; they don’t stay in print long; why not rewrite them as one goes? (“Monsters” 108)

While Haraway feels authorized to test the worlds of SF, however, she’s aware that the conceit falls apart when a narrative provides a conclusive ending, be it apocalyptic, utopian, or something in between. In her words, only a “non-ending” allows the reader to effectively expand the world delineated by the text (“Monsters” 110).

The books that this project upholds as potent examples of environmentally oriented postcolonial novels largely refuse to give their readers the type of closure that would foreclose imaginative re-worlding, but within the confines of technology, that mission presents unique challenges. The video games that are most often cited as superb examples of climate change games, like *Clim’Way* (2010), *Climate Challenge* (2010), *EnerCities* (2011), *CityOne* (2011), *Future Delta* (2011), and *Habitat* (2013), allow users to make choices within the game, but only to a certain extent: all are confined by what the video game designers themselves are able to imagine first. Some more pervasive games, which include a hybrid of online and offline activity, offer more options, but again with limitations. *Greenify*, which encourages users to conceptualize sustainable lifestyles and share them on their social networks for points, and *PowerAgent*, which collects data

about in-home power-consumption through metering devices and asks users to complete missions to limit their real-world power consumption, are more open-ended for their inclusion of real-world action beyond the boundaries of the game. In exchange, both games lack the immersive narrative that evidence suggests is an important component of climate change education. Although some restriction of choice can be a boon in climate change education – infinite possibilities, like in the real world, have the potential to overload users and confound action – video games may offer too few, despite being lauded for offering users “agency” in developing plot.⁵²

Future Delta, one of the most promising climate change games, offers substantial insight into some of the more persuasive capabilities of the union of video games and climate change education, even while showcasing their shortcomings. *Future Delta* used Intergovernmental Panel on Climate Change future scenarios to create simulated 3D environments of the Corporation of Delta, British Columbia, in the year 2100. The project engaged multiple stakeholders to develop plausible future impacts and responses to projected sea level rise in the region (“Designing Futures” 60). The goal of the project was to help players envision the local impacts of climate change, even while conceptualizing the efficacy of various responses. In Act Three of the game, users are asked to choose one of four possible solutions to sea level rise in a feature called “Future Vision,” and the game concludes with a video that models how the chosen action plan might play out (“Designing Futures” 64). While these scenarios are plausible and scientifically informed, they’re also limited in how much they engage user imagination –

⁵² One notable exception is *FutureCoast*, in which crowd-sourced participants left voicemails for players, ostensibly from the future, concerning the effects of climate change. But *FutureCoast*, too, neglected the visual components that also seem to be important for climate change education, and was limited to a specific time period (February-April, 2014).

the four available conclusions prematurely exclude any additional scenarios users might develop independently. The game's developers contend that the detail of the scenarios is a critical component of the educational efficacy of the game, writing:

Future Vision engages participants through aesthetics, affect and interaction. It immerses players in four complex, highly realistic virtual scenarios that require players to mobilize the virtual in-game community in order to create desirable futures. As players collect information, they visually and experientially understand the possible futures and how they might be collectively constructed. This process underlies the concept that reality is constructed and not fixed, and futures are collectively designed.... The game play, informed by climate science, the politics and economic realities of the local place, represents the trade-offs inherent in each virtual scenario. The processes experienced within the game thus provide the seeds for experiencing futures in other community contexts. (65)

While the hyper-realism of the scenarios is certainly a beneficial aspect of the game, the severe limitations of the scenarios is a major, unacknowledged disadvantage.

In contrast, a digital, locus-colonial novel might be able to engage the full potential of user imagination, even while incorporating digital, immersive experiences. To this end, I have worked to develop a preliminary version of such a project that seeks to explicitly link climate change to the drive to colonize Mars, and to think through how humans might export the very behaviors that created the environmental crisis on Earth, through creative narratives. The project, named *Colonize Mars*, has been crowd-sourced through student projects at the University of Oregon: after studying possible current and future impacts of climate change through cli-fi novels and relevant scientific articles,

students create short character studies that depict a potential Mars colonist and explain their environmentally focused reasons for evacuating Earth. Students are also asked to imagine what the colony on Mars might look like, and whether humans have adequately learned to rectify their exploitative practices on Earth. Students also have the opportunity to create multimedia supplements to their stories, including illustrations, audio recordings, and digital movies. Those narratives and their supplements are then overlaid onto the program Google Earth Pro, which contains a detailed visual platform for exploring the surface of Mars. Users are then able to choose a particular narrative and add another stop on the tour, adding to the narrative, overlaying additional multimedia materials, and engaging their imaginations to consider how and if human behavior might adapt to the even more extremely limited resources available on the red planet to which humans have pinned their hopes of planetary redundancy. I have also created additional informational pins dropped on the surface of Google Mars that showcase possible landing and building sites. Moreover, Google Mars comes equipped with a regularly updating wealth of information about the surface of the planet and missions that have already begun there, showing rover locations, asteroid impact sites, and other geographical features. As the project grows, a rich chorus of stakeholders will add their conceptualizations of Mars, including NASA employees, Mars One finalists, and environmentally concerned novelists. The effect is a collaborative, three-dimensional world-building experience that is not limited by any single creative team's imaginative vision. A selection of images of *Colonize Mars* can be seen in figures four and five.

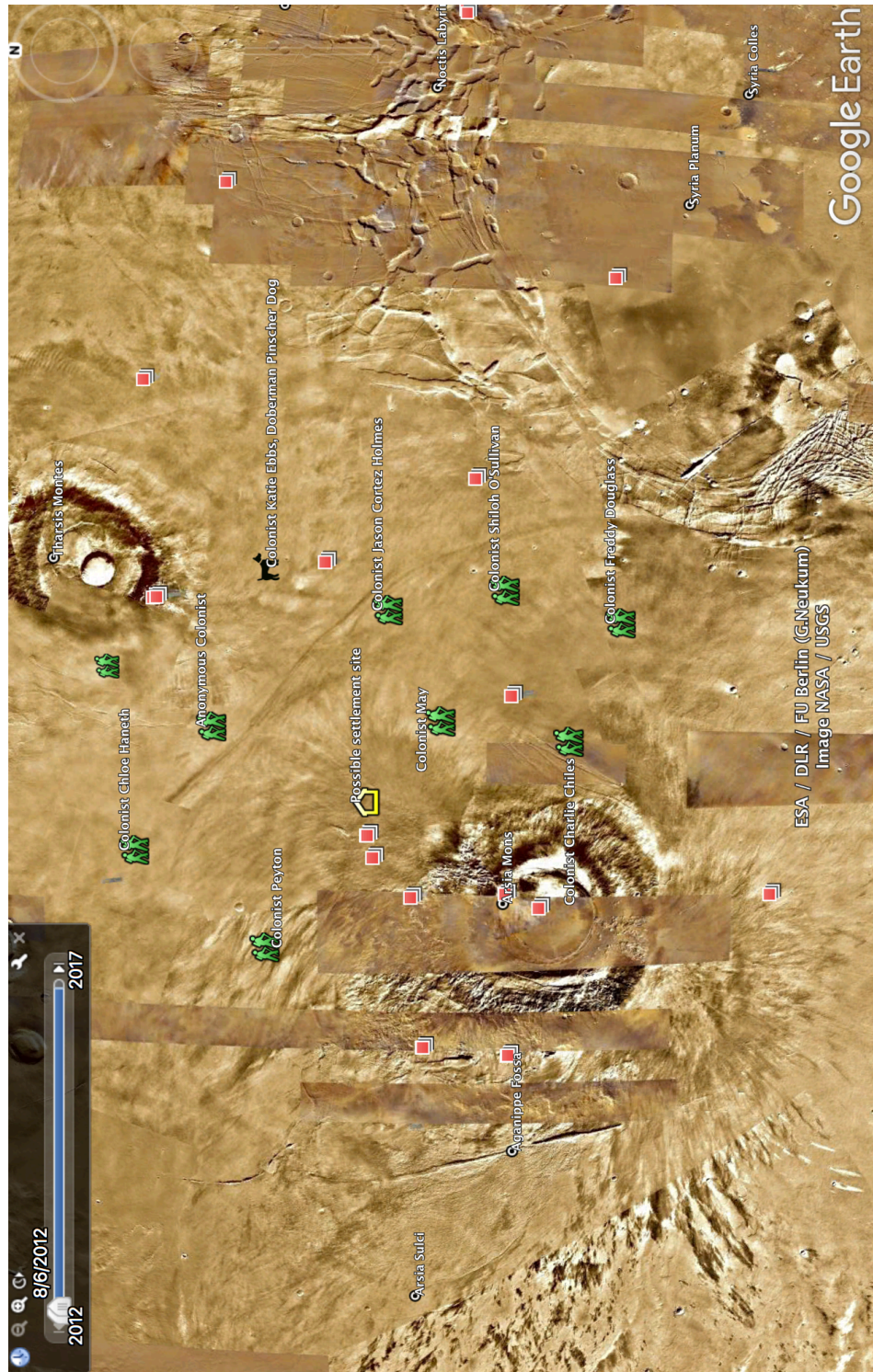


Fig. 4: A screenshot showing one section of *Colonize Mars*. Each icon indicates a different type of narrative, and users can click through to read the sections in any order they choose. See in full at <http://www.rachelrochester.com/colonize-mars/>.

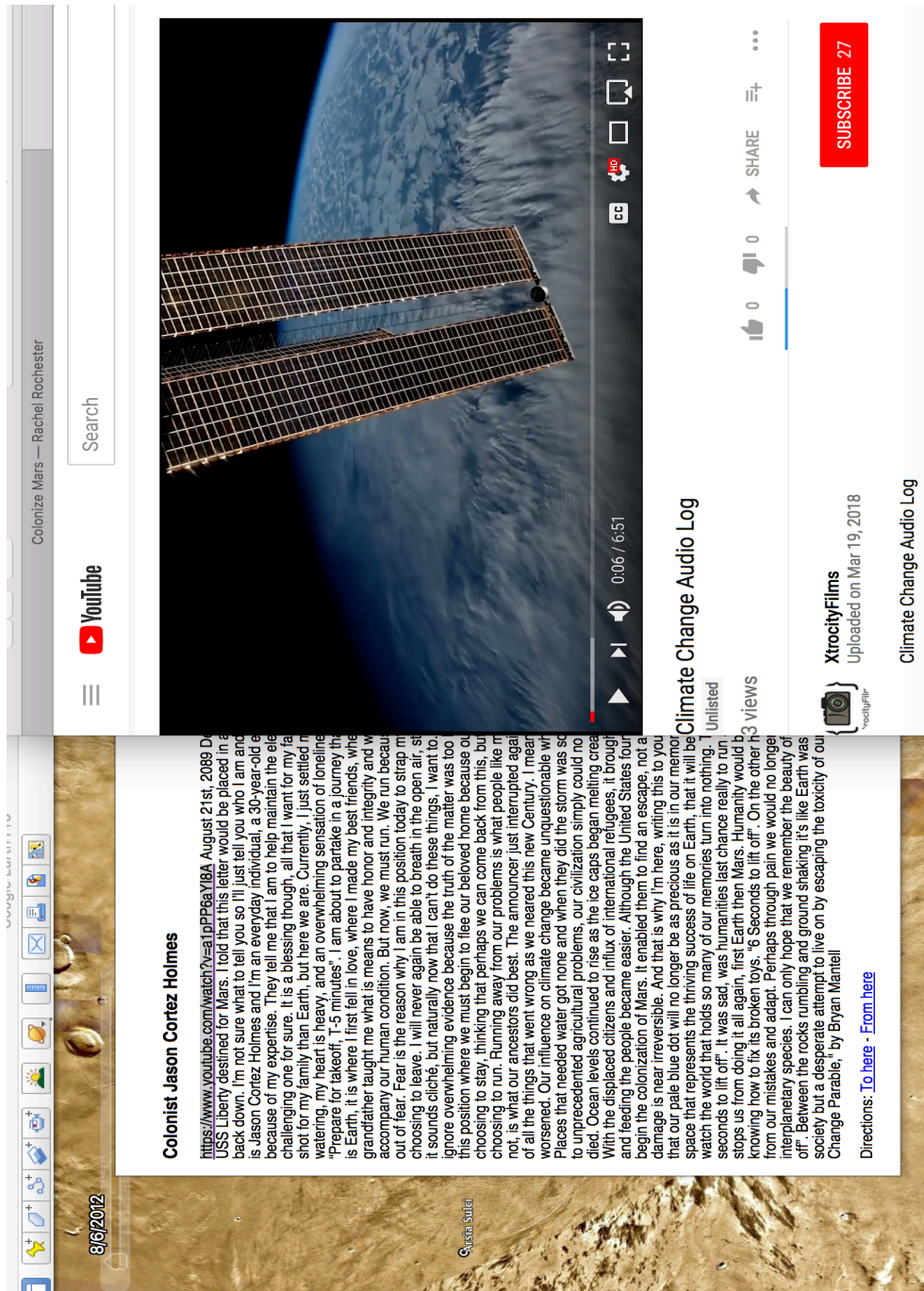


Fig. 5: Many of the narratives showcased on *Colonize Mars* are supplemented by other, linked media. Here is an image of “Colonist Jason Cortez Holmes” by Bryan Mantell alongside a video featuring an entry in the fictional colonists log. See in full at <https://www.youtube.com/watch?v=a1pPP6aYI8A>.

I am certainly not the first academic to use Google Earth to help generate a sense of belonging and intimacy beyond the local. In *Sense of Place and Sense of Planet*, Ursula Heise writes:

Google Earth's database imaginary may well be the latest and post-postmodernist avatar of modernist collage, which has now turned global, digital, dynamic, and interactive. It also, more metaphorically, points the way to some of the information, as well as formal structures, that eco-cosmopolitanism of the kind I have described here can rely on, and through which it can express itself. (67)

For Heise, Google Earth represents one way in which the environmental humanities can detach itself from localized concern and invest in planetary networks and systems.⁵³

Colonize Mars is premised on the belief that Google Mars is capable of doing the same for interplanetary networks and systems.

This is not to say that *Colonize Mars*, in its current form, is not without its own limitations. Currently, the tours cannot be accessed without downloading a KMZ or KML file that cannot be remotely updated, and therefore users may use outdated versions of the project without being aware. Perhaps more importantly, the platform is not currently friendly to crowd-sourced tours without a single moderator. To that end, I have so far been acting as sole administrator. One of the benefits to that is the ability to control the quality and direction of the narrative, although I have attempted to maintain a light hand over the creative trajectory of the storylines. Nevertheless, my mediation remains evident

⁵³ Cosmopolitanism itself has been widely critiqued for its ties to imperial U.S. histories, and eco-cosmopolitanism has faced some of the same allegations. Despite Heise's call to develop a global environmentalism, critics have noted that Heise still focuses primarily on U.S.-based texts (Rahman 261). Others have alleged that cosmopolitanism demands a site of privilege, as even access to Google Earth technology requires the use of the Internet. However, as an estimated 3.2 billion people now have Internet access worldwide, including 2 billion people in developing countries, this argument is up for debate. It seems possible that in the digital age, the Internet is more globally accessible than print books or other physical media (Davidson).

in the current project. Colonial narratives often lapse into the conventions of adventure narratives, which too often pit humans against hostile environments. During class discussion, I have guided my students to consider some of the shortcomings of adventure narratives in environmental contexts, and therefore most of the contributions from students were conscientious about the ways in which their characters interacted with the terrestrial and Martian environments. Only student projects that received a grade of B or better were selected to appear on *Colonize Mars*, as well, and participation was also limited to students who wished to participate and who signed a consent form to publish their work on the Internet, either under a pseudonym or under their own names. As the project expands, the editorial burden may become overwhelming, and it seems likely that I will share control with an editorial board or, better yet, develop a way to allow users to post their own additions to the story with only limited editorial oversight (such as removing contributions that deliberately seek to derail the project). Although relinquishing control could allow certain narrative strands of the story to become less applicable to the goals of the project, that tradeoff seems worthwhile in light of Martha Nell Smith's argument that authoritative curation of digital projects can reify traditional power dynamics and further disenfranchise marginalized contributors (406). Although digital tools present the opportunity to unseat entrenched power and incorporate diverse global voices, that opportunity is lost when a single curator maintains ultimate control.

The shortcomings of the project are largely issues of technological and monetary support, and I believe they can all be rectified as the project grows. The first step in procuring funding has been building this pilot version, which can showcase the educational potentials of such a project. In its current incarnation, it is still possible to see

how a digital locus-colonial novel like *Colonize Mars* can make the impacts of climate change feel local, even in territory as alien as Mars, add a visual dimension to environmental futures, connect users the world over, and show them how their structured, imaginative conceptualizations might impact the course of future colonization.

The project has already proven a rich site for environmental education for the students who have chosen to participate, and it will only become more so as other users add to the polyvocal discourse taking place on the digital surface of the red planet. Students have proven enthusiastic about contributing to a digital creative project, and have gone above and beyond the requirements of the assignment. Even at the introductory undergraduate level, a significant percentage of students sought permission to go over page count, revised multiple drafts, enthusiastically conducted outside research both on colonization efforts and on environmental projections for Earth, and developed a wildly diverse population of colonists who might be the first to (fictionally) set foot on Mars. As students revised their initial drafts based on peer and instructor feedback, it became clear that their comprehension of the nuances of climate change, its relationship to socio-political philosophies, and their conceptualization of what sustainable human civilization might look like on Earth and Mars, grew exponentially. In student evaluations, comments about the project were unanimously positive. Various students wrote, “The Final Project was fun and engaging,” “I especially like the final project idea!,” “Made me truthfully think about real world issues,” “I learned a lot more about climate change and environmentalism,” and, perhaps most surprisingly, one student identified themselves as “a conservative republican” and went on to note that the course

“really helped me see the world and people differently” (sic, “Course Evaluations”).⁵⁴

Although I am pleased that this has proven to be a powerful pedagogical tool in the college classroom setting, I am looking forward to launching the project more widely, so that a more diverse population of users can contribute to the narrative work already begun. The project is available for download on my website, and I am in the process of securing other avenues of distribution.

It is not without some irony that this dissertation concludes by advancing a Digital Humanities project as one possible tool to combat the very neoliberalism that has allowed so much environmental degradation. The staunchest critics of the Digital Humanities, including Sarah Brouillette whose work has informed so much of chapter three, allege that they are little more than a strategy to accelerate the “neoliberal takeover of the university” (Allington et al.). In “Neoliberal Tools (and Archives): A Political History of Digital Humanities,” Daniel Allington, Sarah Brouillette, and David Golumbia find many faults with DH, but one in particular is their perception that for digital humanists, computer skills are prioritized above other forms of humanist knowledge to the detriment of the humanities as a whole. They write:

This view reaches its apotheosis in the repeated suggestion that building computational tools should qualify as a replacement for scholarly writing: an idea

⁵⁴ In recent years, many scholars have scrutinized the prudence of using student evaluations of teaching (SET) to accurately gauge teaching effectiveness. Critics have alleged that SET ratings are unrelated to student learning and are particularly biased against female instructors. For more on this, see Boring et al., Uttl et al., and Mitchell and Martin. However, as many universities still use SETs in consideration of employment decisions including tenure and compensation, and in lieu of alternative measures of pedagogical efficacy, it nevertheless feels relevant to include SET data here. I chose to use the data provided by evaluations (as opposed to in-class polls) because I hope students will be honest in their comments, particularly because they may remain anonymous in evaluations and they are not released to instructors until after grades have been recorded. As the vast majority of data suggests that evaluations are more likely to be more critical of my instruction because of my gender, I am also optimistic that these comments are not unnecessarily generous.

that runs counter to the culture not only of English departments but also of Computer Science departments, which have never handed out PhDs for competence in programming alone.

Although some of their critiques have merit – the field of Digital Humanities certainly abounds with projects that do not seem to particularly contribute to new forms of knowledge or even access in humanities scholarship – I hope that this project may serve as an example of the type of DH work that employs digital tools to explore previously impossible or largely inaccessible lines of humanist inquiry. This type of digital narrative can build on the work of previous textual narratives, like graphic novels and choose-your-own-adventure books, and the immersive agency cultivated by video games, to create an innovative experience that drives critical thinking about the links among colonialism, climate change, and other forms of environmental degradation.

Early environmental novels had the ability to warn readers about what might happen if humans continued to act without regard for environmental welfare, but in the Anthropocene novels have a different task. Some environmental wrongs can no longer be made right, and some of the effects of climate change are no longer reversible. Contemporary novels that seek to intervene in the ongoing environmental crisis must make visible the ongoing effects of climate change and environmental degradation, and forecast what might yet be remedied. It seems appropriate that this dissertation, which has worked to detail how postcolonial conventions can help environmentally concerned authors catalyze action in the face of climate change, should end by looking at the pre-colonial situation unfolding on Mars. Mars presents a new frontier, and it has yet to be seen if Mars will benefit from the lessons learned the hard way on Earth, or suffer for the

patterns we have yet to break. Mars can be a chance for humans to end the cycle of social and environmental exploitation that makes astronomical pioneers so convinced that Earth will eventually be uninhabitable. But if we can learn those lessons while conceptualizing what we wish for the seeming blank slate of Mars, it is not too late to apply them locally. By expanding the novel form in innovative ways to present colonial histories, speculative futures, and the means of resistance to neoliberal systems of exploitation, we may learn to interrupt our more destructive patterns in pursuit of a more sustainable means of inhabiting Earth.

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